SANYO

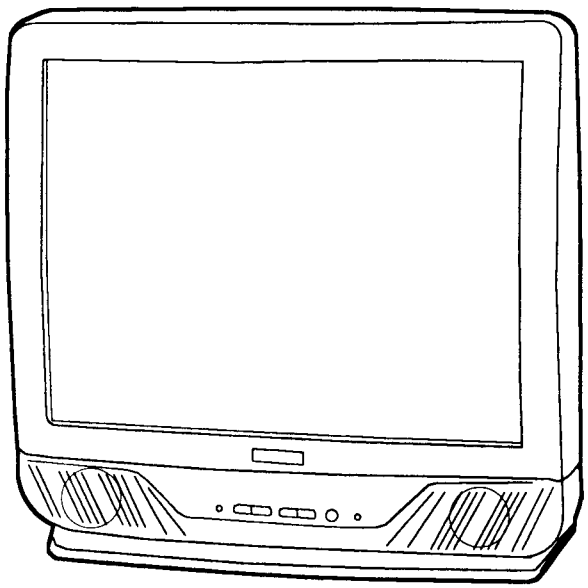
FILE NO.

SERVICE MANUAL

Remote Control Color Television

DS27780 (U.S.A.)

ORIGINAL VERSION



Chassis No. 27780-00

NOTE: Match the Chassis No. on the unit's back cover with the Chassis No. in the Service Manual.

If the Original Version Service Manual Chassis No. does not match the unit's, additional Service Literature is required. You **must** refer to "Notices" to the Original Service Manual prior to servicing the unit.

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Specifications

Power Rating 120V 60Hz
Antenna Input Impedance ..... 75 Ω
UHF/VHF/CATV
Receiving Channel ..... 2-13(VHF),
14-69(UHF),
01, 14-125(CATV)
Remote Ready .. 36 Key Universal Remote Control
Sound Output 1.0W/CH
Intermediate Frequency
- Picture IF Carrier 45.75MHz
- Sound Carrier 41.25MHz
- Color Sub Carrier 42.17MHz

Picture Tube A68AHD32X04
Semiconductors
- Integrated Circuits 11
- Transistors 39
  Except within Tuner and RC Pre-Amp.

Cabinet Dimensions
- Width 664mm
- Height 629mm
- Depth 503mm

G5JPM, PRODUCT CODE 111328592

REFERENCE No. SM510171

SAFETY INSTRUCTIONS

SAFETY PRECAUTIONS

WARNING: The chassis of this receiver has a floating ground with the potential of one half the AC line voltage in respect to earth ground. Service should not be attempted by anyone not familiar with the precautions necessary when working on this type of equipment.

The following precautions must be observed:

1. An isolation transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.

2. Comply with all cautions and safety-related notes provided on the side of the cabinet, inside the cabinet, on the chassis, and the picture tube.

3. When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as control knobs, adjustment covers, shields and barriers.

   DO NOT OPERATE THIS TELEVISION RECEIVER IF THE PROTECTIVE SHIELD IS NOT IN POSITION AND PROPERLY SECURED.

4. Before replacing the back cover of the set, thoroughly inspect the inside of the cabinet to see that no stray parts or tools have been left inside.
   Before returning any television to the customer, the service technician must perform the following safety checks to be sure that the unit is completely safe to operate without danger of electrical shock.

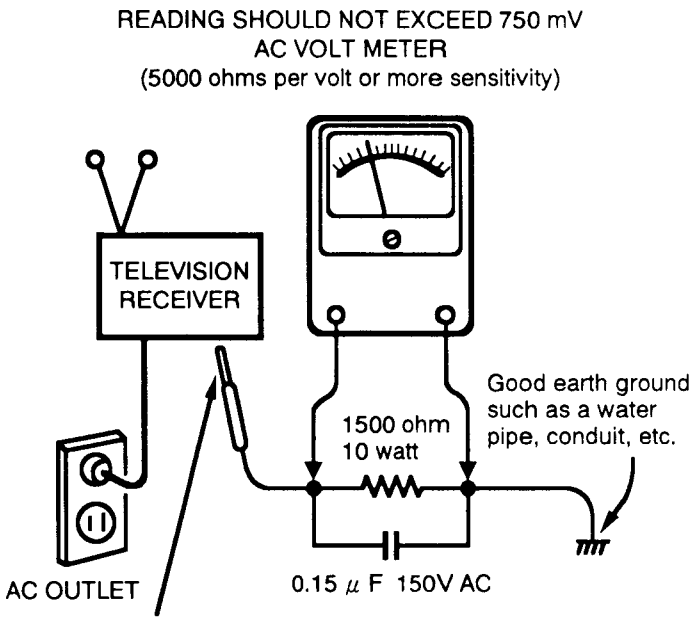
ANTENNA COLD CHECK

Remove AC plug from the 120VAC outlet and place a jumper across the two blades. Connect one lead of an ohmmeter to the jumpered AC plug, and touch the other lead to each exposed antenna terminal (UHF and VHF combination antenna terminal). The resistance must measure between 1M ohm and 5.2M ohm. Any resistance value below or above this range indicates an abnormality which requires corrective action.

LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120 VAC outlet. (Do not use an isolation transformer for this check.) Use an AC voltmeter, that has 5000 ohms per volt or more sensitivity. Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 μ F 150 VAC capacitor, between a known good earth ground (water pipe, conduit, etc.) and all exposed metal parts of the cabinet (antennas, handle bracket, metal cabinet, screw heads, metal overlays, control shafts, etc.). Measure the AC voltage across the 1500 ohm resistor.
The AC voltage should not exceed 750 mV. A reading exceeding 750 mV indicates that a dangerous potential exists. The fault must be located and corrected. Repeat the above test with the receiver power plug reversed.

NEVER RETURN A RECEIVER TO THE CUSTOMER WITHOUT TAKING THE NECESSARY CORRECTIVE ACTION.


READING SHOULD NOT EXCEED 750 mV
AC VOLT METER
(5000 ohms per volt or more sensitivity)
TELEVISION RECEIVER
1500 ohm
10 watt
Good earth ground such as a water pipe, conduit, etc.
AC OUTLET
0.15 μ F 150V AC
To be touched to all of exposed metal parts.

Voltmeter Hook-up for Leakage Current Check

X-RADIATION PRECAUTION

The primary source of X-RADIATION in solid-state receiver is the picture tube. The picture tube is specially constructed to limit X-Ray emission. For continued X-RADIATION protection, the replacement tube must be the same type as the original (including the suffix letter in the part numbers). Excessive high voltage may produce potentially hazardous X-RADIATION. To avoid such hazards, the high voltage must be maintained within specific limits. Refer to the X-RADIATION WARNING NOTE on the CHASSIS SCHEMATIC in this service manual for specific high voltage limits. If the high voltage exceeds specified limits, check the components specified on the chassis schematic diagram and take the necessary corrective action. Carefully follow the instructions for the +B Voltage Check and the High Voltage Check to maintain the high voltage within the specified limits.

HIGH VOLTAGE HOLD-DOWN TEST

To prevent X-RADIATION from the picture tube due to excessive high voltage, a HOLD-DOWN circuit is provided in the high voltage circuits. Every time the receiver is serviced, the high voltage HOLD-DOWN circuit must be tested for proper operation. Refer to the "HIGH VOLTAGE HOLD-DOWN TEST" in service adjustments.

PRODUCT SAFETY NOTICE

When replacing components in a receiver, always keep in mind the necessary product safety precautions. Pay special attention to the replacement of components marked with a star (★) in the parts list and in the schematic diagram. To ensure safe product operation, it is necessary to replace those components with the exact same PARTS.

SERVICE ADJUSTMENTS

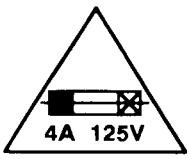
ANTENNA CONNECTION

This receiver is designed for UHF/VHF reception. A 75 ohm terminal is provided for UHF and VHF receptions.
When connecting the CATV antenna system, connect the 75 ohm coaxial cable directly to 75 ohm terminal. For 300 ohm UHF/VHF antenna, use an adapter (not included with the TV set).

CIRCUIT PROTECTION

Fuse F601 (4A) is included in the AC line. This fuse must be replaced with the proper fuse. (See Parts List.)

CAUTION



FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE 4A, 125V FUSE.

ATTENTION : POUR MAINTENIR LA PROTECTION CONTRE LES RISQUES D'INCENDIE UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE 4A, 125V.

+B VOLTAGE CHECK

Connect voltmeter + lead to "TJ1 130V" and - lead to ground (TE7). Connect receiver to AC 120V line. Tune receiver to an active channel. Reset the picture controls to the "FACTORY PRESET" levels (press remote control "RESET" key twice). Voltage must measure between +128.0V and +132.0V. If the voltage is out of this range, the power circuit must be checked.
No +B adjustment is provided on this chassis.

RF-AGC ADJUSTMENT

1. Tune receiver to strongest VHF station in your area.
2. Set contrast and brightness controls for maximum.
3. Turn RF-AGC Control (VR141) in the direction which causes snow to appear, then in the opposite direction until the snow just disappears.

VERTICAL SIZE ADJUSTMENT

Tune receiver to an active channel. Adjust Vert. Size Control (VR501) for full scan.

VERTICAL CENTERING ADJUSTMENT

Tune receiver to an active channel. Check that picture is in the center of TV screen. If picture center is too low, connect resistor R513 (470 ohm, 1W). If picture center is too high, connect resistor R512 (470 ohm, 1W).

FOCUS ADJUSTMENT

Adjust Focus Control (T402) for well-defined scanning lines.

GRAYSCALE ADJUSTMENT

1. Set Red (VR704) and Blue (VR705) Drive Controls to mid position. Set Blue (VR703), Green (VR702) and Red (VR701) Bias Controls to minimum (fully counter-clockwise).
2. Set Screen Control (T402) to minimum (fully counter-clockwise).
3. Set Service Switch (SW701) to "SERVICE" position on Pix Tube Board.
4. Advance Screen Control (T402) clockwise to obtain just visible one color line. If line does not appear, place this control to maximum (fully clockwise).
5. Advance each Bias Control to obtain just visible white line.
6. Set Service Switch (SW701) to "NORMAL" position.
7. Adjust Red and Blue Drive Controls alternately to produce normal black and white picture in highlight areas.
8. Check for proper grayscale at all brightness levels.

Note: If Grayscale Adjustment is made after picture tube replacement, check brightness level adjustment.

BRIGHTNESS LEVEL ADJUSTMENT

Note: High Voltage Check,and AGC and Grayscale Adjustments must be completed before attempting Brightness Level Adjustment.

1. Connect a color bar generator to the antenna terminal.
2. Switch the generator to the crosshatch pattern.
3. Reset the picture controls to the "FACTORY PRESET" levels.
4. Connect voltmeter (high impedance) + lead to terminal "TP51" and - lead to terminal "TP50" on main board. Set voltmeter for 1.5V ~ 3V range.
5. Turn off the receiver and disconnect the AC power cord (AC 120V line).
6. While pressing the "MENU" key, reconnect the AC power cord. The "SUBBRIGHT ADJUST" display will now appear. (See Figure 1.)
7. Adjust Sub-Brightness Level with "+" or " - " key for 685mVDC.
8. Press the "MENU" key to turn off the SUBBRIGHT ADJUST display.
9. Check brightness level on every active channels, readjust (repeat steps 5~9 if necessary.)

Note: Do not set to excessive brightness levels, otherwise the contrast level will be suppressed.

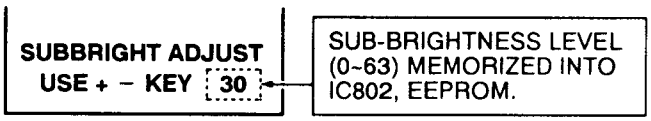


Figure 1. SUBBRIGHT ADJUST Display

HIGH VOLTAGE CHECK

Note: +B (+130V) Voltage Check and Grayscale Adjustment must be completed before attempting High Voltage Check.

1. Connect high voltage voltmeter + lead to anode of picture tube, and connect - lead to ground.
2. Tune receiver to an active channel and confirm TV is operating properly.
3. Eliminate the beam current by adjusting contrast and brightness controls to minimum.
4. Confirm high voltage is within 28.0KV to 30.0KV. If reading is not within range, check horizontal circuit.
   No high-voltage adjustment is provided on this chassis.

HIGH VOLTAGE HOLD-DOWN TEST

Every time the receiver is serviced, the HIGH VOLTAGE HOLD-DOWN circuit must be tested for proper operation by following these steps:

1. Connect receiver to AC 120V line. Tune receiver to an active channel. Reset the picture controls to the "FACTORY PRESET" levels.
2. Check that the voltage measured between "TP7" and "TE7" (ground side) is within 16.5VDC to 21VDC. If the voltage is out of this range, the Hold-Down Circuit must be checked.
3. Connect a DC Voltage supply to "TP7" through a 100 ohm, 1/4W resistor and "TE7"(ground side). Adjust the DC voltage to 23VDC. The receiver should shutdown, losing raster and sound. Then the receiver should turn off automatically. This reaction indicates that the Hold-Down Circuit is functioning properly. If the receiver does not shutdown, a malfunction is indicated and its cause must be found and corrected.
4. To obtain picture again, remove the DC Supply and wait a few minutes. Now turn on the receiver.

AFT FIELD ADJUSTMENT

1. Disconnect the AC power cord (AC 120V line).
2. Connect voltmeter + lead to "TP113" on main board and - lead to main board ground. Ground "TP113" with a short jumper lead.
3. Press and Hold the "POWER" key on the front control panel while connecting the AC power cord. TV will turn on.
4. Tune the TV set to a good-quality active color channel, using keys 0 ~ 9 on the remote control transmitter. Wait a few seconds until properly tuned, and then remove the short lead from terminal "TP113".
5. Turn AFT centering coil (T161) on main board fully clockwise, and then gradually turn the coil counterclockwise until voltage is at the maximum level (approximately 4.5V). Continue to turn the coil counterclockwise until the voltage is at the minimum level (approximately 0.5V), and then turn the coil clockwise until voltage indicates 2.5V. Voltage change in the coil adjustment is shown in Figure 2.
6. Disconnect voltmeter from chassis.

Select every active channel with keys 0 ~ 9 and scanning keys, and check to be sure the AFT is operating properly.

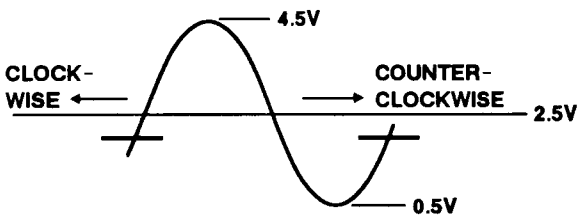


Figure 2. Voltage Change In Coil Adjustment

REMOTE CONTROL TRANSMITTER SERVICE NOTE

To repair remote control transmitter, check as follows:

1. Check battery installation and battery voltage. If necessary, replace batteries.
2. Connect oscilloscope to Q9901 "Base" and ground.
3. Check the amplitude of the pulse on the base by pressing the remote control transmitter keys.
4. If pulse does not appear, replace with a new unit.

DISPLAY PLL ADJUSTMENT

1. Connect Digital Voltmeter - lead to ground and + lead to "TP501" (PLL Filter).
2. Tune receiver to an active channel.
3. Reset the picture controls to the "FACTORY PRESET" levels.
4. Adjust VC801 for a D.V.M. reading of 2.5 ± 0.5VDC.

SOUND ADJUSTMENT

1. Tune receiver to strongest VHF station in your area.
2. Set volume control to middle level.
3. Adjust Sound I.F. Transformer (T131) for the best sound and minimum noise.

MULTI-SOUND SECTION ADJUSTMENTS

1.5 fH B.P.F. Adjustment

1. Connect DC Supply (+15.0 ± 0.2VDC) to "TP2" and ground.
2. Connect Signal Generator to "TP301" through Capacitor (10 μ F, 16V, Non-Polarized Electrolytic) and ground.
3. Ground "TP20" with a jumper lead.
4. Connect an Audio Voltmeter to "TP310" and ground.
5. Set Signal Output to 22.9kHz, 290mVp-p.
6. Adjust 1.5fH B.P.F. Adjustment (VR3403) for a reading of minimum voltage.

Stereo VCO Adjustment

7. Remove Audio Voltmeter from "TP310".
8. Connect DC Voltmeter to "TP312" and ground.
9. Change Signal Output to 15.734kHz, 140mVp-p.
10. Read DC voltage at "TP312".
11. Change connection of DC Voltmeter to "TP313" and ground.
12. Adjust Stereo VCO Adjustment (VR3406) for "TP313" voltage to conform to "TP312" voltage.

Multi-Sound Section Alignment

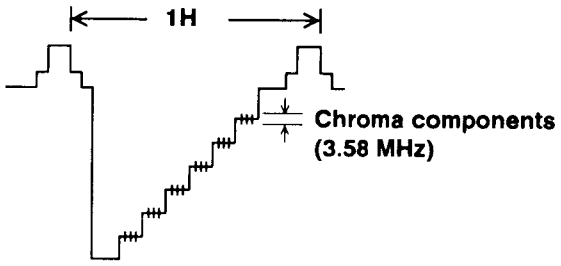
Variable resistors VR3411 and VR3421 are adjusted for stereo separation and have been preset at the factory. If these parts are to be replaced, first check the resistance values or adjustment positions of the original parts and set the replacement parts to the same values or positions.

If these parts are replaced, check the stereo and bilingual sound on a received broadcast multi-sound program.

If separation is unacceptable, tune the adjustment positions of the replacement parts slightly. Adjust VR3421 (Low Separation) for minimum low frequencies in the right speaker. Adjust VR3411 (High Separation) for minimum high frequencies in the left speaker. Repeat adjustments for best separation.

COMB FILTER ADJUSTMENT

1. Connect color-bar generator to antenna terminal.
2. Reset the picture controls to the "FACTORY PRESET" levels.
3. Connect scope to "TP27" and ground.
4. Adjust VR300 and C305 for minimum chroma components in the video signals at "TP27".



PURITY AND CONVERGENCE ADJUSTMENTS

Purity and convergence have been aligned at the factory. No re-alignment is necessary.

P.I.F. ALIGNMENT INSTRUCTIONS

GENERAL

Shielding around the P.I.F. circuit must be in place. To prevent possible damage to the TV circuit, the TV set should be OFF when you connect the alignment equipment to the circuit.

P.I.F. ALIGNMENT

Connect the test equipment and set the TV controls as follows:

BIAS SUPPLY	Apply IF AGC +6.0 ± 1.0 VDC to "TP12", and +15.0 ± 0.2 VDC supply to "TP2."
SCOPE	Connect scope VERT INPUT to SCOPE VERT on SWEEP/MARKER GENERATOR. Connect scope EXTERNAL HORIZ IN to scope HORIZ on SWEEP/MARKER GENERATOR.
SWEEP/MARKER GENERATOR	Connect SWEEP OUTPUT to "TP132" through the matching pad as shown in Figure 1. Connect INPUT PROBE to "TP16" through scope input pad as shown in Figure 2.
TELEVISION	Ground "TP11" with jumper lead. Turn on the TV set and tune to an inactive channel.

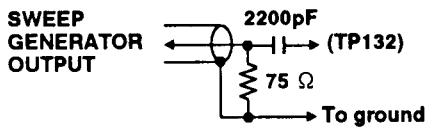


Figure 1. Matching Pad

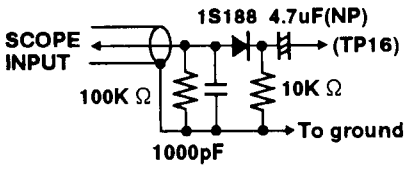


Figure 2. Scope Input Pad

Align P.I.F. as follows:

STEPS AND MARKERS	ALIGNMENT PROCEDURES
P.I.F. detectopm stage adjustment. 41.67MHz, 42.17MHz, 42.67MHz and 45.75MHz markers ON.	Response characteristics should be similar to Figure 3. Adjust P. I. F. Detection Transformer (T151) so that the maximum attenuation point of the P. I. F. detection spectrum is at 45.75MHz as shown in Figure 3.

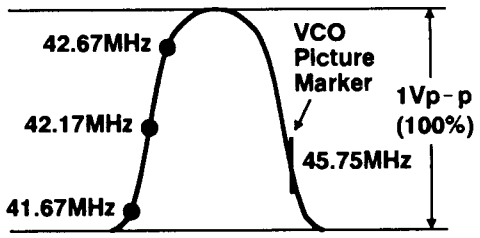


Figure 3. P.I.F. Detection Stage

SERVICE HINTS

POWER FAILURE DETECTOR

This set is equipped with a Power Failure Detector included in the CPU which checks for an abnormal condition in the chassis power supplies, including the power supply derived from the Horizontal Output Transformer.

If, while the power is on, a failure is caused by any of the following which results in a low voltage supply, the CPU will turn the set off in 1.5 seconds to prevent unnecessary damage:

- Failure within the power supply circuits.
- A short circuit in the load side from the supply.
- Stoppage of the Horizontal Output Oscillator caused by the X-Radiation protection Hold-Down Circuit.

If, while the power is off, the power is switched on and any of these failures remains uncorrected, the CPU will shut off the power within 3 seconds.

Check the following if the set is turned off by the power failure detector.

1. Disconnect the AC power cord (AC 120V line) for at least 10 seconds.
2. Connect a DC Voltmeter to the following TEST POINT .

TJ4	**26V**
TJ6	**12V**
D429 Cathode	**7V**

3. Press the power key and check for the proper voltage supplies.
4. If either of these voltages is low, the power failure detector should turn the set off within 3 seconds.
5. Check all circuits listed above.

Note: This set is equipped with a Power Surge Protection feature included in the CPU. If power failures occur three times within 15 minutes, the CPU will automatically stop the functioning to help prevent secondary damage. (TV will not turn on by pressing the power key.) To reset the operating programs within the CPU, disconnect the AC power cord for at least 10 seconds.

MECHANICAL DISASSEMBLIES

CABINET BACK REMOVAL

1. Refer to Figure 1, remove 10 screws.
2. Pull off cabinet back and remove.

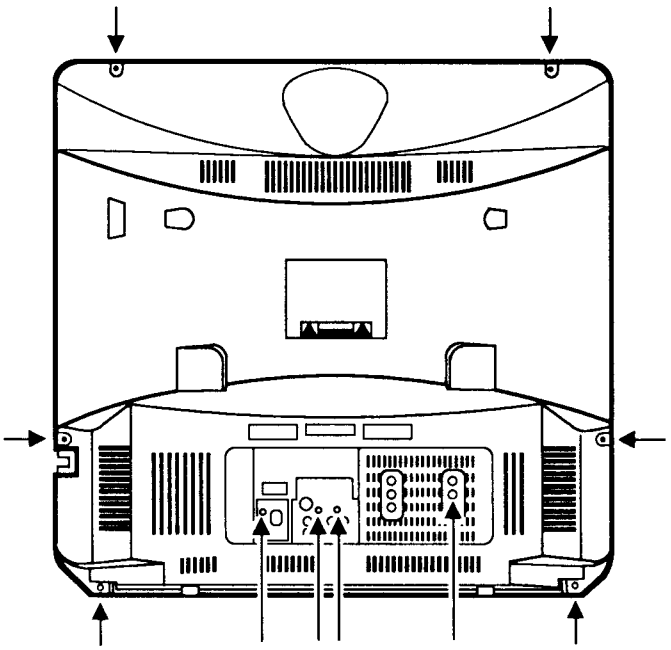


Figure 1. Cabinet Back Removal

CHASSIS REMOVAL

1. Remove cabinet back.
2. Discharge the picture tube anode (2nd anode lead) to the dag coating (picture tube grounding lead).
3. Disconnect Degaussing coil socket (KD), Picture tube socket, Deflection yoke connector (KX), Speakers connector (K58R), picture tube ground leads and 2nd anode lead.
4. Remove chassis completely by sliding it straight back.

PICTURE TUBE REMOVAL

CAUTION: Do not disturb the deflection yoke or magnet assembly on the picture tube neck. Care must be taken to keep these assemblies intact, unless picture tube is being replaced. Discharge the picture tube to the coating before handling the tube.

1. Remove chassis, referring to "Chassis Removal" instructions.
2. Place cabinet's front face down on a soft surface.
3. Remove the screw on each corner of the picture tube and GENTLY lift the picture tube out of the cabinet.
4. Install a replacement picture tube in reverse order. Properly install the degaussing coil and picture tube grounding lead on the picture tube. See Figure 2.

Note: If Picture Tube is being replaced, mount the Degaussing Coil properly on the tube. See Figure 2.

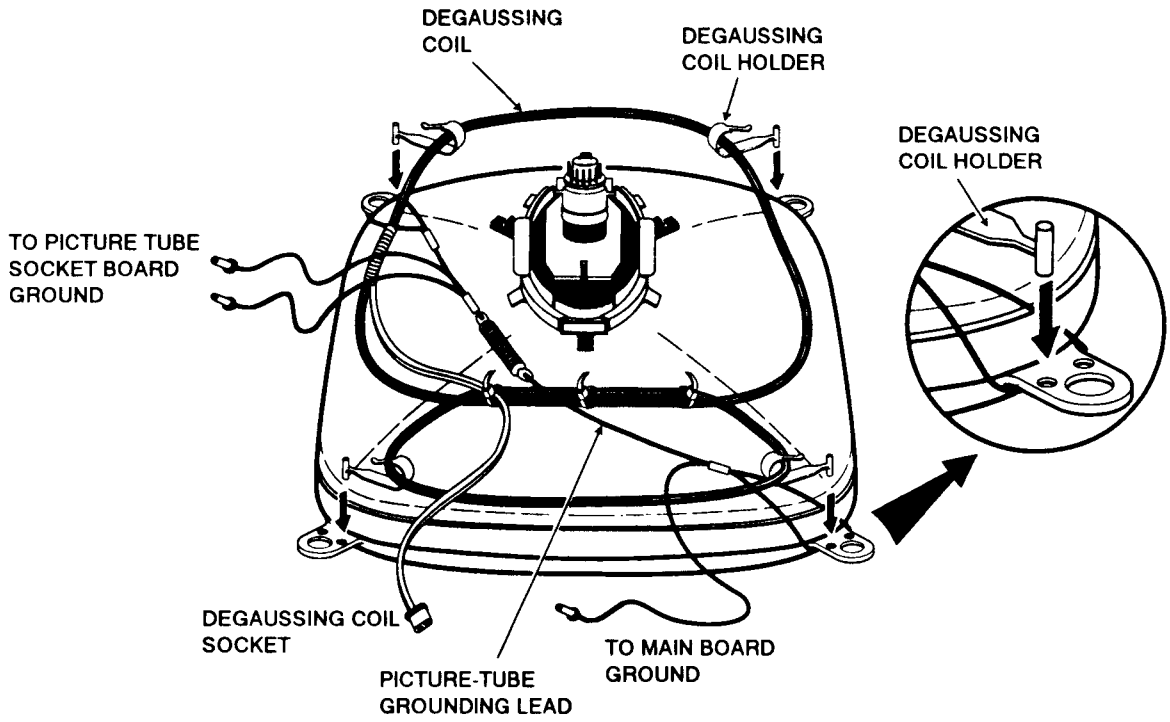


Figure 2. Picture Tube Replacement

REMOTE CONTROL TRANSMITTER DISASSEMBLY

1. Press the battery cover latch forward and lift the cover in the direction of the arrow to remove it. See Figure 3.
2. Remove the screw located inside the compartment.
3. Remove the screw located on the opposite end of the remote control.
4. Starting at the rear of the remote, push the top section of the cabinet in and pull up the bottom section. Proceed by pressing in at the sides of top section, while pulling the bottom from the top. See Figure 4.

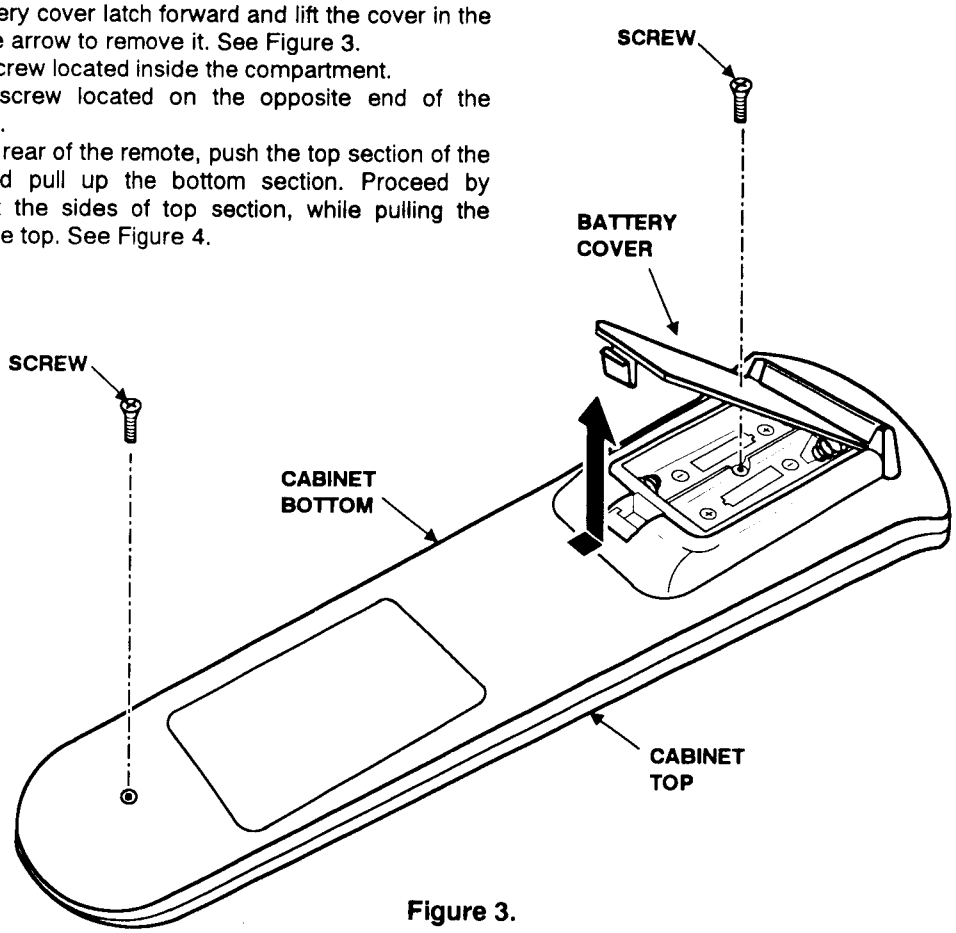


Figure 3.

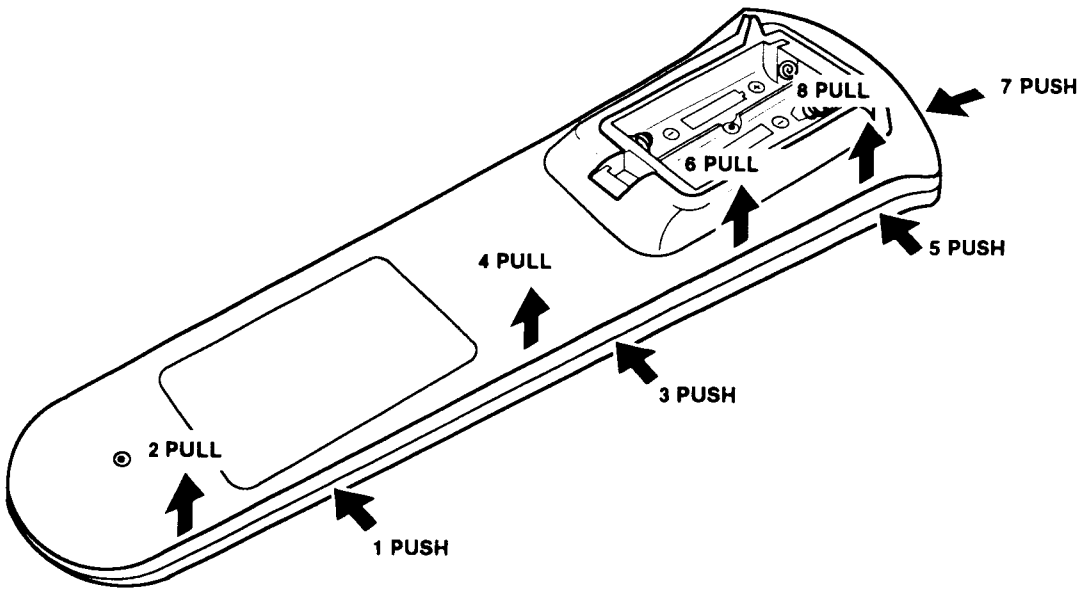


Figure 4.

Remote Control Transmitter Disassembly

CHASSIS ELECTRICAL PARTS LIST

CAUTION: To protect against electric shock and for continued product safety, refer to SAFETY PRECAUTIONS, X-RADIATION PRECAUTION, HIGH VOLTAGE HOLD-DOWN TEST and PRODUCT SAFETY NOTICE on Page 2.

PRODUCT SAFETY NOTICE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT REPLACEMENT IS MADE IN ANY AREA OF A RECEIVER. COMPONENTS INDICATED BY A STAR (★) IN THIS PARTS LIST AND THE SCHEMATIC DIAGRAM DESIGNATE COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. IT IS PARTICULARLY RECOMMENDED THAT ONLY PARTS DESIGNATED ON THE FOLLOWING PARTS LIST BE USED FOR COMPONENT REPLACEMENT DESIGNATED BY A STAR. NO DEVIATIONS FROM RESISTANCE, WATTAGE AND VOLTAGE RATINGS MAY BE MADE FOR REPLACEMENT ITEMS DESIGNATED BY A STAR.

Notes: Parts having Location Number are located in the following boards.

Numbers under 600 Series	**In the Main Board.**
Numbers 700 Series	**In the Picture Tube Socket Board.**
Numbers 800 Series	**In the Main Board.**
Numbers 900 Series	**Out of Board.**
Numbers 1000 Series	**In the AV Board.**
Numbers 1900 Series	**In the Main Board.**
Numbers 3400 Series	**In the Main Board.**
Numbers 3500 Series	**In the AV Board.**
Numbers 3600 Series	**In the AV Board.**
Numbers 7900 Series	**In the Main Board.**
Numbers 8000 Series	**In the PIP Board.**

Note: Schematic part location numbers may not always match with the part descriptions. The part descriptions are correct and should be used.

Schematic Location	Part No.	Description

CAPACITORS

NOTES:
Read description in the Capacitor as follows:

(Example)
CERAMIC 100P K 50V

- 50V — Rated Voltage
- K — Tolerance Symbols:

less than 10PF

A...Not specified	
B... ± 0.1PF	C... ± 0.25PF
D... ± 0.5PF	F... ± 1PF
G... ± 2PF	R...+0.25 − 0PF
S...+0 − 0.25PF	E...+0 − 1PF

more than 10PF

A...Not specified	
B... ± 0.1%	C... ± 0.25%
D... ± 0.5%	F... ± 1%
G... ± 2%	H... ± 3%
J... ± 5%	K... ± 10%
L... ± 15%	M... ± 20%
N... ± 30%	P...+100 − 0%
Q...+30 − 10%	T...+50 − 10%
U...+75 − 10%	V...+20 − 10%
W...+100 − 10%	X...+40 − 20%
Y...+150 − 10%	Z...+80 − 20%

- 100P — Rated Value: P...Pico Farad U...Micro Farad
- CERAMIC — Material:

CERAMIC	Ceramic
MT-PAPER	Metalized Paper
POLYESTER	Polyester
MT-POLYEST	Metalized Polyester
POLYPRO	Polypropylene
MT-POLYPRO	Metalized Polypropylene
COMPO-FILM	Composite Film
MT-COMPO	Metalized Composite
STYRENE	Styrene
TA-SOLID	Tantalum Solid
AL-SOLID	Aluminum Solid
ELECT	Electrolytic
NP-ELECT	Non-Polarized Electrolytic
OS-SOLID	Aluminum Solid with Organic Semiconductive Electrolytic

Schematic Location	Part No.	Description		
C001	403 049 0008	ELECT	1U M	50V
C002	403 049 0008	ELECT	1U M	50V
C003	403 074 5702	CERAMIC	560P K	50V
C004	403 074 5702	CERAMIC	560P K	50V
C005	403 044 9501	ELECT	100U M	25V
C006	403 044 9501	ELECT	100U M	25V
C007	403 044 9501	ELECT	100U M	25V
C008	403 057 3107	POLYESTER	0.1U K	50V
	403 067 5603	MT-COMPO	0.1U J	50V
	403 166 6808	MT-POLYEST	0.1U J	63V
C009	403 057 3107	POLYESTER	0.1U K	50V
	403 067 5603	MT-COMPO	0.1U J	50V
	403 166 6808	MT-POLYEST	0.1U J	63V
C010	403 044 1703	ELECT	470U M	16V
C011	403 044 1703	ELECT	470U M	16V
C015	403 042 4805	ELECT	1000U M	16V
C101	403 039 9004	ELECT	1000U M	10V
C103	403 069 8305	CERAMIC	0.01U Z	50V
C104	403 038 8602	ELECT	33U M	6.3V
C131	403 067 6709	MT-COMPO	0.22U J	50V
	403 166 8109	MT-POLYEST	0.22U J	63V
C133	403 069 8305	CERAMIC	0.01U Z	50V
C142	403 069 8305	CERAMIC	0.01U Z	50V
C143	403 043 9106	ELECT	47U M	16V
C144	403 069 8305	CERAMIC	0.01U Z	50V
C151	403 048 6308	ELECT	0.47U M	50V
C152	403 041 8804	ELECT	10U M	16V
C153	403 069 8305	CERAMIC	0.01U Z	50V
C154	403 068 9006	CERAMIC	100P K	50V
C155	403 069 0507	CERAMIC	1000P K	50V
C156	403 060 8403	POLYESTER	0.033U K	50V
	403 312 1305	POLYESTER	0.033U K	50V
C161	403 028 2009	CERAMIC	56P J	50V
C166	403 019 7402	CERAMIC	27P J	50V
C202	403 069 8305	CERAMIC	0.01U Z	50V
C203	403 009 3100	CERAMIC	100P J	50V
C205	403 033 3305	CERAMIC	82P J	50V
C208	403 011 3501	CERAMIC	120P J	50V

Schematic Location	Part No.	Description
C209	403 041 8804	ELECT 10U M 16V
C212	403 031 8104	CERAMIC 7P D 50V
C214	403 049 0008	ELECT 1U M 50V
C215	403 048 6308	ELECT 0.47U M 50V
C216	403 049 0008	ELECT 1U M 50V
C217	403 008 5204	CERAMIC 10P D 50V
C219	403 069 8305	CERAMIC 0.01U Z 50V
C241	403 042 2405	ELECT 100U M 16V
C251	403 043 9106	ELECT 47U M 16V
C252	403 058 3403	POLYESTER 0.015U K 50V
	403 311 9708	POLYESTER 0.015U K 50V
C253	403 049 9803	ELECT 2.2U M 50V
C281	403 069 0507	CERAMIC 1000P K 50V
C301	403 069 8305	CERAMIC 0.01U Z 50V
C302	403 018 6208	CERAMIC 220P J 50V
C303	403 042 2405	ELECT 100U M 16V
C304	403 011 3501	CERAMIC 120P J 50V
C305	610 003 0381	TRIMMER, 40PF (Y/C SEP.)
C324	403 069 0507	CERAMIC 1000P K 50V
C351	403 049 0008	ELECT 1U M 50V
C352	403 069 0507	CERAMIC 1000P K 50V
C371	403 048 6308	ELECT 0.47U M 50V
C401	403 042 2405	ELECT 100U M 16V
C402	403 049 9803	ELECT 2.2U M 50V
C403	403 060 8403	POLYESTER 0.033U K 50V
	403 312 1305	POLYESTER 0.033U K 50V
C404	403 073 6403	CERAMIC 470P K 50V
C406	403 076 3607	CERAMIC 470P K 500V
C407	403 076 0507	CERAMIC 2200P K 500V
C408	403 055 0504	ELECT 1U M 160V
★C411	403 232 3403	CERAMIC 680P K 3K
	403 324 3007	CERAMIC 680P K 3K
★C412	404 066 4109	MT-POLYPRO 0.012U H 1.5K
★C416	403 082 8009	POLYPRO 0.2U J 200V
★C417	403 082 8009	POLYPRO 0.2U J 200V
C421	403 038 6301	ELECT 220U M 6.3V
C473	403 067 7805	MT-COMPO 0.47U J 50V
	403 166 7706	MT-POLYEST 0.47U J 63V
C481	403 043 0202	ELECT 220U M 16V
C482	403 115 0802	ELECT 22U M 100V
C483	403 042 2405	ELECT 100U M 16V
C484	403 051 0607	ELECT 4.7U M 50V
C486	403 076 3607	CERAMIC 470P K 500V
C487	403 052 8503	ELECT 1000U M 35V
C491	403 042 2405	ELECT 100U M 16V
C492	403 043 9106	ELECT 47U M 16V
C493	404 056 5307	NP-ELECT 2.2U M 100V
C501	403 043 0202	ELECT 220U M 16V
C502	403 057 0601	POLYESTER 0.01U K 50V
	403 311 8701	POLYESTER 0.01U K 50V
C503	403 204 1802	ELECT 3.3U K 50V
C504	403 046 8007	ELECT 3300U M 25V
C505	403 072 4400	CERAMIC 270P K 50V
C506	403 204 6104	ELECT 1U M 50V
C507	403 053 2104	ELECT 220U M 35V
C508	403 051 0607	ELECT 4.7U M 50V
C509	403 069 0507	CERAMIC 1000P K 50V
C511	403 063 2309	POLYESTER 0.068U K 50V
	403 312 3002	POLYESTER 0.068U K 50V
C556	403 041 8804	ELECT 10U M 16V
★C601	404 072 7903	MT-POLYEST 0.068U K 250V
	404 073 7506	MT-POLYEST 0.068U M 275V
★C606	404 008 6802	CERAMIC 2200P M 125V
★C608	403 165 9404	CERAMIC 4700P K 1K
	403 232 0600	CERAMIC 4700P K 1K
C609	404 075 5005	ELECT 470U M 200V
C612	403 067 6501	MT-COMPO 0.18U J 50V
	403 166 8208	MT-POLYEST 0.18U J 63V

Schematic Location	Part No.	Description
C613	403 214 5203	POLYESTER 0.012U J 50V
	403 311 9203	POLYESTER 0.012U J 50V
C621	403 075 7101	CERAMIC 1000P K 500V
C622	403 047 5005	ELECT 470U M 25V
★C625	403 232 0402	CERAMIC 2700P K 1K
C626	403 045 9807	ELECT 2200U M 25V
C627	403 045 7803	ELECT 220U M 25V
C628	404 037 0703	ELECT 470U M 160V
★C632	404 008 6604	CERAMIC 1000P K 125V
C641	403 069 0507	CERAMIC 1000P K 50V
C642	403 069 8305	CERAMIC 0.01U Z 50V
C681	403 075 7101	CERAMIC 1000P K 500V
C682	403 047 5005	ELECT 470U M 25V
C684	403 042 2405	ELECT 100U M 16V
C701	403 070 8400	CERAMIC 1500P K 50V
C703	403 074 8901	CERAMIC 680P K 50V
C705	403 074 8901	CERAMIC 680P K 50V
C707	403 074 8901	CERAMIC 680P K 50V
★C708	403 077 2708	CERAMIC 1000P P 2K
	403 175 3409	CERAMIC 1000P P 2K
C801	403 067 5603	MT-COMPO 0.1U J 50V
	403 166 6808	MT-POLYEST 0.1U J 63V
C802	403 041 8804	ELECT 10U M 16V
C803	403 067 5603	MT-COMPO 0.1U J 50V
	403 166 6808	MT-POLYEST 0.1U J 63V
C806	403 069 8305	CERAMIC 0.01U Z 50V
C811	403 049 0008	ELECT 1U M 50V
C814	403 023 9706	CERAMIC 39P J 50V
C818	403 071 7402	CERAMIC 2200P K 50V
C819	403 049 9803	ELECT 2.2U M 50V
C821	403 041 8804	ELECT 10U M 16V
C826	403 049 9803	ELECT 2.2U M 50V
C827	403 072 5308	CERAMIC 2700P K 50V
C829	403 049 0008	ELECT 1U M 50V
C830	403 069 8305	CERAMIC 0.01U Z 50V
C831	403 076 0507	CERAMIC 2200P K 500V
C832	403 061 9805	POLYESTER 0.047U J 50V
	403 312 2104	POLYESTER 0.047U J 50V
C834	403 058 2604	POLYESTER 0.015U J 50V
	403 311 9609	POLYESTER 0.015U J 50V
C851	403 041 8804	ELECT 10U M 16V
C856	403 041 8804	ELECT 10U M 16V
C861	403 041 8804	ELECT 10U M 16V
C868	403 041 8804	ELECT 10U M 16V
C871	403 041 8804	ELECT 10U M 16V
C883	403 049 0008	ELECT 1U M 50V
C886	403 049 0008	ELECT 1U M 50V
C892	403 041 8804	ELECT 10U M 16V
C1002	403 046 9905	ELECT 4.7U M 25V
C1003	403 046 9905	ELECT 4.7U M 25V
C1011	403 049 0008	ELECT 1U M 50V
C1012	403 049 0008	ELECT 1U M 50V
C1021	403 049 0008	ELECT 1U M 50V
C1022	403 049 0008	ELECT 1U M 50V
C1051	403 042 8308	ELECT 22U M 16V
C1052	403 069 8305	CERAMIC 0.01U Z 50V
C1081	403 041 9405	ELECT 10U M 16V
C1082	403 069 8305	CERAMIC 0.01U Z 50V
C3401	403 046 9905	ELECT 4.7U M 25V
C3402	403 048 6308	ELECT 0.47U M 50V
C3404	403 046 9905	ELECT 4.7U M 25V
C3406	403 046 9905	ELECT 4.7U M 25V
C3407	403 073 8308	CERAMIC 4700P K 50V
C3408	403 046 9905	ELECT 4.7U M 25V
C3409	403 062 0504	POLYESTER 0.047U K 50V
	403 312 2203	POLYESTER 0.047U K 50V
C3411	403 046 9905	ELECT 4.7U M 25V
C3412	403 046 9905	ELECT 4.7U M 25V

Schematic Location	Part No.	Description
C3413	403 090 6004	TA-SOLID 3.3U K 10V
	403 124 7908	TA-SOLID 3.3U K 10V
C3414	403 049 0008	ELECT 1U M 50V
C3416	403 090 3607	TA-SOLID 10U K 10V
	403 090 3706	TA-SOLID 10U K 10V
C3417	403 046 9905	ELECT 4.7U M 25V
C3418	403 060 0001	POLYESTER 2700P J 50V
	403 312 0605	POLYESTER 2700P J 50V
C3419	403 041 2109	ELECT 47U M 10V
C3422	403 048 6308	ELECT 0.47U M 50V
C3423	403 046 9905	ELECT 4.7U M 25V
C3424	403 138 5600	POLYESTER 5600P J 50V
	403 312 2302	POLYESTER 5600P J 50V
C3426	403 214 5203	POLYESTER 0.012U J 50V
	403 311 9203	POLYESTER 0.012U J 50V
C3436	403 041 8804	ELECT 10U M 16V
C3501	403 041 8804	ELECT 10U M 16V
C3521	403 041 8804	ELECT 10U M 16V
C3531	403 042 2405	ELECT 100U M 16V
C3532	403 043 3906	ELECT 33U M 16V
C3533	403 086 1808	NP-ELECT 0.47U M 50V
C3602	403 058 3403	POLYESTER 0.015U K 50V
	403 058 3809	POLYESTER 0.015U K 50V
C3603	403 048 4205	ELECT 0.33U M 50V
C3604	403 049 0008	ELECT 1U M 50V
C3606	403 049 0008	ELECT 1U M 50V
C3607	403 048 4205	ELECT 0.33U M 50V
C3608	403 058 3403	POLYESTER 0.015U K 50V
	403 058 3809	POLYESTER 0.015U K 50V
C8002	403 043 9106	ELECT 47U M 16V
C8007	403 067 5603	MT-COMPO 0.1U J 50V
	403 166 6808	MT-POLYEST 0.1U J 63V
C8008	403 067 6709	MT-COMPO 0.22U J 50V
	403 166 8109	MT-POLYEST 0.22U J 63V
C8011	403 009 5708	CERAMIC 100P J 50V
C8012	403 009 5708	CERAMIC 100P J 50V
C8018	403 009 5708	CERAMIC 100P J 50V
C8019	403 009 5708	CERAMIC 100P J 50V
C8022	403 009 5708	CERAMIC 100P J 50V
C8023	403 067 6709	MT-COMPO 0.22U J 50V
	403 166 8109	MT-POLYEST 0.22U J 63V
C8024	403 067 5603	MT-COMPO 0.1U J 50V
	403 166 6808	MT-POLYEST 0.1U J 63V
C8025	403 049 0008	ELECT 1U M 50V
C8028	403 075 0706	CERAMIC 6800P K 50V
C8029	403 049 0008	ELECT 1U M 50V
C8030	403 069 1702	CERAMIC 1000P K 50V
C8032	403 069 9500	CERAMIC 0.01U Z 50V
C8033	403 067 5603	MT-COMPO 0.1U J 50V
	403 166 6808	MT-POLYEST 0.1U J 63V
C8034	403 018 7403	CERAMIC 220P J 50V
C8036	403 049 0008	ELECT 1U M 50V
C8037	403 018 7403	CERAMIC 220P J 50V
C8038	403 067 6709	MT-COMPO 0.22U J 50V
	403 166 8109	MT-POLYEST 0.22U J 63V
C8039	403 010 8507	CERAMIC 12P J 50V
C8041	403 072 5605	CERAMIC 2700P K 50V
C8042	403 063 2309	POLYESTER 0.068U K 50V
	403 312 3002	POLYESTER 0.068U K 50V
C8043	403 069 9500	CERAMIC 0.01U Z 50V
C8044	403 069 9500	CERAMIC 0.01U Z 50V
C8045	403 073 4409	CERAMIC 0.039U K 50V
C8046	403 069 9500	CERAMIC 0.01U Z 50V
C8047	403 067 5603	MT-COMPO 0.1U J 50V
	403 166 6808	MT-POLYEST 0.1U J 63V
C8048	403 069 9500	CERAMIC 0.01U Z 50V
C8049	403 073 4409	CERAMIC 0.039U K 50V
C8050	403 047 8402	ELECT 0.1U M 50V

Schematic Location	Part No.	Description
C8051	403 069 1702	CERAMIC 1000P K 50V
C8052	403 010 8507	CERAMIC 12P J 50V
C8056	403 069 9500	CERAMIC 0.01U Z 50V
C8057	403 069 9500	CERAMIC 0.01U Z 50V
C8058	403 069 9500	CERAMIC 0.01U Z 50V
C8061	403 043 9106	ELECT 47U M 16V
C8063	403 074 9502	CERAMIC 680P K 50V
C8065	403 043 9106	ELECT 47U M 16V
VC801	610 003 0381	TRIMMER, 40PF (DISPLAY PLL)

DIODES

D101	407 056 2307	ZENER DIODE RD36EB1 (36V)
	407 163 9503	ZENER DIODE UZ-36BCA (36V)
D102	407 056 8002	ZENER DIODE RD5.1EB2 (5.1V)
	407 056 8200	ZENER DIODE RD5.1EB3 (5.1V)
	407 151 8402	ZENER DIODE UZ-5.1BCB (5.1V)
	407 163 8209	ZENER DIODE UZ-5.1BCC (5.1V)
D201	407 005 4505	DIODE DS442X
	407 007 9904	DIODE GMA01
	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
	407 013 1206	DIODE 1S1555
	407 013 4207	DIODE 1S2076
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D351	407 013 1008	DIODE 1S1553
	407 013 4306	DIODE 1S2076A
	407 013 6508	DIODE 1S2471
	408 008 2406	DIODE 1N4148
D361	407 005 4505	DIODE DS442X
	407 007 9904	DIODE GMA01
	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
	407 013 1206	DIODE 1S1555
	407 013 4207	DIODE 1S2076
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
★D421	407 158 1307	ZENER DIODE HZ11B2L (11V)
★D422	407 158 1307	ZENER DIODE HZ11B2L (11V)
D428	407 054 5706	ZENER DIODE RD15EB1 (15V)
	407 163 8100	ZENER DIODE UZ-15BCA (15V)
D429	407 005 4505	DIODE DS442X
	407 007 9904	DIODE GMA01
	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
	407 013 1206	DIODE 1S1555
	407 013 4207	DIODE 1S2076
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D481	407 007 6606	DIODE ES1
	407 124 5506	DIODE RMPG06G
	407 124 6404	DIODE ERA18-04
D482	407 011 4407	DIODE TVR1G
D483	407 007 6606	DIODE ES1
	407 124 5506	DIODE RMPG06G
	407 124 6404	DIODE ERA18-04
D486	407 054 0008	ZENER DIODE RD10EB2 (10V)
	407 151 1304	ZENER DIODE UZ-10BCB (10V)
D487	407 005 8602	DIODE ERA15-02
	407 011 3004	DIODE S5277B
	407 088 6502	DIODE MPG06D
	408 009 9404	DIODE 1N4002ID
D501	407 005 8602	DIODE ERA15-02
	407 011 3004	DIODE S5277B
	407 088 6502	DIODE MPG06D
	408 009 9404	DIODE 1N4002ID

Schematic Location	Part No.	Description
D503	407 056 2307	ZENER DIODE RD36EB1(36V)
	407 163 9503	ZENER DIODE UZ-36BCA(36V)
★D601	407 005 7605	DIODE EM2B
	407 013 3200	DIODE 1S1887A
	408 008 8606	DIODE GP15G
★D602	407 005 7605	DIODE EM2B
	407 013 3200	DIODE 1S1887A
	408 008 8606	DIODE GP15G
★D603	407 005 7605	DIODE EM2B
	407 013 3200	DIODE 1S1887A
	408 008 8606	DIODE GP15G
★D604	407 005 7605	DIODE EM2B
	407 013 3200	DIODE 1S1887A
	408 008 8606	DIODE GP15G
D609	407 007 6903	DIODE ES1Z
	407 124 5605	DIODE RMPG06D
	407 124 6503	DIODE ERA18-02
	408 009 9008	DIODE BYD33D
D610	407 013 1008	DIODE 1S1553
	407 013 4306	DIODE 1S2076A
	407 013 6508	DIODE 1S2471
	408 008 2406	DIODE 1N4148
D611	407 057 6304	ZENER DIODE RD7.5EB1(7.5V)
	407 151 8808	ZENER DIODE UZ-7.5BCA(7.5V)
★D612	407 104 2402	PHOTO COUPLE PC817C
	407 106 6101	PHOTO COUPLE PC817D
	407 147 5705	PHOTO COUPLE ON3131S
	407 175 9904	PHOTO COUPLE TLP621-1-BL
D614	407 013 1008	DIODE 1S1553
	407 013 4306	DIODE 1S2076A
	407 013 6508	DIODE 1S2471
	408 008 2406	DIODE 1N4148
★D621	407 007 7603	DIODE EU2
D622	407 054 3108	ZENER DIODE RD12EB1(12V)
	407 164 6808	ZENER DIODE UZ-12BCA(12V)
★D624	407 106 2806	DIODE RU3YX
★D625A	407 129 7000	DIODE RU4AM LF-L1
D681	407 005 8602	DIODE ERA15-02
	407 011 3004	DIODE S5277B
	407 088 6502	DIODE MPG06D
	408 009 9404	DIODE 1N4002ID
D683	407 005 4505	DIODE DS442X
	407 007 9904	DIODE GMA01
	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
	407 013 1206	DIODE 1S1555
	407 013 4207	DIODE 1S2076
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D684	407 057 0104	ZENER DIODE RD5.6EB3(5.6V)
	407 151 8501	ZENER DIODE UZ-5.6BCC(5.6V)
D804	407 005 8602	DIODE ERA15-02
	407 011 3004	DIODE S5277B
	407 088 6502	DIODE MPG06D
	408 009 9404	DIODE 1N4002ID
D806	407 005 8602	DIODE ERA15-02
	407 011 3004	DIODE S5277B
	407 088 6502	DIODE MPG06D
	408 009 9404	DIODE 1N4002ID
D831	407 056 4707	ZENER DIODE RD4.3EB2(4.3V)
	407 164 9601	ZENER DIODE UZ-4.3BCB(4.3V)
D834	407 055 1806	ZENER DIODE RD20EB2(20V)
	407 164 7904	ZENER DIODE UZ-20BCB(20V)
D836	407 005 4505	DIODE DS442X
	407 007 9904	DIODE GMA01
	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
	407 013 1206	DIODE 1S1555

Schematic Location	Part No.	Description
	407 013 4207	DIODE 1S2076
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D843	407 005 4505	DIODE DS442X
	407 007 9904	DIODE GMA01
	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
	407 013 1206	DIODE 1S1555
	407 013 4207	DIODE 1S2076
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D851	407 005 4505	DIODE DS442X
	407 007 9904	DIODE GMA01
	407 012 4406	DIODE 1SS133
	407 012 5809	DIODE 1SS176
	407 013 1206	DIODE 1S1555
	407 013 4207	DIODE 1S2076
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D1051	407 054 4709	ZENER DIODE RD13EB2(13V)
	407 054 4808	ZENER DIODE RD13EB3(13V)
	407 163 8001	ZENER DIODE UZ-13BCC(13V)
	407 163 9206	ZENER DIODE UZ-13BCA(13V)
D1052	407 054 4709	ZENER DIODE RD13EB2(13V)
	407 054 4808	ZENER DIODE RD13EB3(13V)
	407 163 8001	ZENER DIODE UZ-13BCC(13V)
	407 163 9206	ZENER DIODE UZ-13BCA(13V)
D1053	407 054 4709	ZENER DIODE RD13EB2(13V)
	407 054 4808	ZENER DIODE RD13EB3(13V)
	407 163 8001	ZENER DIODE UZ-13BCC(13V)
	407 163 9206	ZENER DIODE UZ-13BCA(13V)

INTEGRATED CIRCUITS

IC001	409 017 7208	IC LA4261
★IC101	409 274 3302	IC LA7673
★IC501	409 173 2802	IC LA7838
★IC601	409 172 8102	IC SE130NH
IC801	410 273 2401	IC LC864128W-5E21
IC802	409 270 0008	IC ST24C01B1
	409 321 0902	IC 24LC01B/P
	409 321 7307	IC XLS24C01AP
	410 243 3803	IC AT24C01A-10PC-2.5
IC1081	409 051 3006	IC TC4053BP
IC3401	409 272 3205	IC CXA1534S
IC3601	409 279 3109	IC CXA1279AS
IC8001	409 392 7305	IC MC44461B
IC8002	409 172 1509	IC MC78M05CT
	409 241 5407	IC BA178M05T
	409 320 5700	IC UPC78M05AHF

COILS

★LF601	645 012 0589	LINE FILTER
L142	645 003 9713	INDUCTOR, 15U K
	645 016 2657	INDUCTOR, 15U K
L164	645 003 9782	INDUCTOR, 22U K
	645 016 2831	INDUCTOR, 22U K
L166	645 003 9812	INDUCTOR, 33U K
	645 016 2985	INDUCTOR, 33U K
L201	645 001 4567	INDUCTOR, 10U K
	645 016 2534	INDUCTOR, 10U K
L301	645 009 6013	DELAY LINE
L302	610 029 7388	PEAKING COIL 15UH J
	645 007 9627	INDUCTOR, 15U J
L303	610 029 7425	PEAKING COIL 18UH J

Schematic Location	Part No.	Description
	645 007 9719	INDUCTOR, 18U J
L315	610 029 7883	PEAKING COIL 8.2UH J
	645 008 0395	INDUCTOR, 8.2U J
L401	610 032 4381	FILTER COIL
	610 032 4404	FILTER COIL
	645 021 2727	INDUCTOR, 3.3U, FILTER
L402	610 031 9998	PIPE CORE
L403	610 078 6820	PIPE CORE
L404	610 029 8200	PEAKING COIL 120UH K
	645 007 9597	INDUCTOR, 120U K
★L413	610 000 0858	LINEARITY COIL
	610 000 0872	LINEARITY COIL
L601	610 078 6820	PIPE CORE
L623	610 078 6820	PIPE CORE
L624	645 005 5423	INDUCTOR, 82U K
	645 007 8156	INDUCTOR, 82U K
L625	610 078 6820	PIPE CORE
L801	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L802	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L806	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L811	610 029 7760	PEAKING COIL 5.6UH J
	645 008 0180	INDUCTOR, 5.6U J
L823	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L826	645 003 9898	INDUCTOR, 82U K
	645 016 3258	INDUCTOR, 82U K
L841	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L842	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
★L901	610 229 3210	DEGAUSSING COIL
	645 022 8674	COIL, DEGAUSSING
L8006	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K

TRANSISTORS

Q001	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q161	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q213	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3208	TR 2SA564A-R(CU)
	405 004 4809	TR 2SA608-F-CTV-NP
	405 006 1806	TR 2SA933S-R
Q281	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q303	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q304	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q306	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q371	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q372	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q401	405 013 6207	TR 2SC2271-D-CTV
	405 013 6306	TR 2SC2271-E-CTV
★Q402	405 082 2407	TR 2SD1879-CTV-YB
Q481	405 023 5009	TR 2SD400-E-MP
	405 023 5306	TR 2SD400-F-MP
Q486	405 023 5009	TR 2SD400-E-MP
	405 023 5306	TR 2SD400-F-MP
Q491	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR

Schematic Location	Part No.	Description
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
★Q601	405 095 9004	TR 2SC4423-CTV
Q604	405 058 0208	TR 2SC3807-R-CTV-YA
Q605	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q621	405 059 9804	TR 2SD1913-Q-RA
	405 059 9903	TR 2SD1913-R-RA
Q641	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q681	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2309	TR 2SC1815-Y
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
Q682	405 023 5009	TR 2SD400-E-MP
	405 023 5306	TR 2SD400-F-MP
Q701	405 041 6507	TR 2SC2621-D-RA
	405 041 6705	TR 2SC2621-E-RA
	405 066 4304	TR 2SC2621-C-RA
	405 066 9903	TR 2SC2688(1)-K
	405 067 0008	TR 2SC2688(1)-L
	405 067 0107	TR 2SC2688(1)-M
	406 000 3605	TR 2SC3620(LB-SAN-1)
Q703	405 041 6507	TR 2SC2621-D-RA
	405 041 6705	TR 2SC2621-E-RA
	405 066 4304	TR 2SC2621-C-RA
	405 066 9903	TR 2SC2688(1)-K
	405 067 0008	TR 2SC2688(1)-L
	405 067 0107	TR 2SC2688(1)-M
	406 000 3605	TR 2SC3620(LB-SAN-1)
Q705	405 041 6507	TR 2SC2621-D-RA
	405 041 6705	TR 2SC2621-E-RA
	405 066 4304	TR 2SC2621-C-RA
	405 066 9903	TR 2SC2688(1)-K
	405 067 0008	TR 2SC2688(1)-L
	405 067 0107	TR 2SC2688(1)-M
	406 000 3605	TR 2SC3620(LB-SAN-1)
Q831	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)

Schematic Location	Part No.	Description
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q881	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q882	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q1011	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q1021	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q1061	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q1071	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR

Schematic Location	Part No.	Description
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q3431	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q3501	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q3502	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q3521	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q3522	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA

Schematic Location	Part No.	Description
Q3531	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q3532	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 019 1909	TR 2SC536-E-NP
	405 019 2708	TR 2SC536-F-NP
	405 019 3804	TR 2SC536-G-NP
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q8051	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 004 4205	TR 2SA608-E-CTV-NP
	405 004 4809	TR 2SA608-F-CTV-NP
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R

RESISTORS

NOTES:
Read description in the Resistor as follows:

(Example)
CARBON 4.7K J A 1/4W

- 1/4W — Rated Wattage
- A — Performance Symbols:
  A...General B...Non-flammable
  Z...Low noise
  Other...Temperature coefficient
- J — Tolerance Symbols:
  A... ± 0.05% B... ± 0.1% C... ± 0.25%
  D... ± 0.5% F... ± 1% G... ± 2%
  J... ± 5% K... ± 10% M... ± 20%
  P...+5 − 15%
- 4.7K — Rated Value, ohms:
  K...1,000 M...1,000,000
- CARBON — Material:
  CARBON ····· Carbon
  MT-FILM ····· Metal Film
  OXIDE-MT ····· Oxide Metal Film
  SOLID ····· Composition
  MT-GLAZE ····· Metal Glaze
  WIRE WOUND ····· Wire Wound
  CERAMIC RES ···· Ceramic
  FUSIBLE RES ····· Fusible

R001	401 026 4308	CARBON	3.3K JA 1/6W
R002	401 026 4308	CARBON	3.3K JA 1/6W
R005	401 026 9907	CARBON	4.7K JA 1/6W

Schematic Location	Part No.	Description
R006	401 026 9907	CARBON 4.7K JA 1/6W
R007	401 027 2303	CARBON 560 JA 1/6W
R008	401 027 2303	CARBON 560 JA 1/6W
★R009	401 015 6603	CARBON 2.2 JB 1/4W
★R010	401 015 6603	CARBON 2.2 JB 1/4W
R011	401 026 0607	CARBON 270 JA 1/6W
R012	401 027 2600	CARBON 5.6K JA 1/6W
R101	401 010 2501	CARBON 47 JA 1/2W
★R104	401 060 7402	OXIDE-MT 270 JA 1W
R106	401 008 8102	CARBON 22K JA 1/2W
R107	401 009 8606	CARBON 39 JA 1/2W
R111	401 024 9008	CARBON 120 JA 1/6W
R112	401 024 9008	CARBON 120 JA 1/6W
R133	401 027 8602	CARBON 8.2K JA 1/6W
R142	401 024 7707	CARBON 100K JA 1/6W
R151	401 025 1308	CARBON 150 JA 1/6W
R152	401 025 7805	CARBON 2.2K JA 1/6W
R153	401 024 7400	CARBON 10K JA 1/6W
R155	401 026 1604	CARBON 270K JA 1/6W
R156	401 026 1604	CARBON 270K JA 1/6W
R157	401 026 4902	CARBON 330K JA 1/6W
R159	401 025 7409	CARBON 220 JA 1/6W
R161	401 026 1604	CARBON 270K JA 1/6W
R162	401 024 7004	CARBON 1K JA 1/6W
R163	401 026 3905	CARBON 330 JA 1/6W
R164	401 026 1000	CARBON 2.7K JA 1/6W
R202	401 026 0607	CARBON 270 JA 1/6W
R205	401 027 5205	CARBON 680 JA 1/6W
R212	401 025 7409	CARBON 220 JA 1/6W
R213	401 025 7409	CARBON 220 JA 1/6W
R216	401 024 8001	CARBON 1M JA 1/6W
R217	401 024 8001	CARBON 1M JA 1/6W
R251	401 024 7400	CARBON 10K JA 1/6W
R252	401 027 8602	CARBON 8.2K JA 1/6W
R282	401 026 6609	CARBON 390 JA 1/6W
R284	401 026 0409	CARBON 27 JA 1/6W
R304	401 027 3003	CARBON 56K JA 1/6W
R305	401 027 2303	CARBON 560 JA 1/6W
R308	401 025 7805	CARBON 2.2K JA 1/6W
R309	401 026 0607	CARBON 270 JA 1/6W
R310	401 024 7004	CARBON 1K JA 1/6W
R311	401 026 0607	CARBON 270 JA 1/6W
R312	401 024 7004	CARBON 1K JA 1/6W
R313	401 024 7004	CARBON 1K JA 1/6W
R351	401 026 9600	CARBON 470 JA 1/6W
R352	401 026 4902	CARBON 330K JA 1/6W
R354	401 024 9701	CARBON 12K JA 1/6W
R355	401 026 4308	CARBON 3.3K JA 1/6W
R358	401 026 4605	CARBON 33K JA 1/6W
R361	401 024 7400	CARBON 10K JA 1/6W
R363	401 027 2600	CARBON 5.6K JA 1/6W
R371	401 026 4605	CARBON 33K JA 1/6W
R372	401 024 7400	CARBON 10K JA 1/6W
R373	401 024 7707	CARBON 100K JA 1/6W
R374	401 027 3003	CARBON 56K JA 1/6W
R375	401 024 7400	CARBON 10K JA 1/6W
R401	401 021 1906	CARBON 560 JA 1/4W
R403	401 025 7805	CARBON 2.2K JA 1/6W
R404	401 026 3905	CARBON 330 JA 1/6W
R406	401 010 8305	CARBON 5.6K JA 1/2W
★R407	401 069 3702	OXIDE-MT 6.8K JA 2W
★R411	402 057 2707	WIRE WOUND 6.8 KA 8W
	402 067 8201	WIRE WOUND 6.8 KA 8W
	402 076 9107	WIRE WOUND 6.8 KA 7W
★R418	401 009 1607	CARBON 2.7K JB 1/2W
★R421	401 052 8608	MT-FILM 1.3K FA 1/6W
★R422	401 052 6802	MT-FILM 10K FA 1/6W
★R423	401 053 2605	MT-FILM 3.3K FA 1/6W

Schematic Location	Part No.	Description
R426	401 027 5205	CARBON 680 JA 1/6W
R428	401 025 1902	CARBON 15K JA 1/6W
★R481	401 009 4905	CARBON 33 JB 1/2W
★R482	401 011 9004	CARBON 1 JB 1/4W
★R483	401 006 7701	CARBON 1 JB 1/2W
★R484	401 068 6209	OXIDE-MT 5.6 JA 2W
R485	401 027 5205	CARBON 680 JA 1/6W
★R486	401 063 4606	OXIDE-MT 8.2 JA 1W
R487	401 025 1308	CARBON 150 JA 1/6W
R488	401 026 6609	CARBON 390 JA 1/6W
R489	401 026 6401	CARBON 39 JA 1/6W
R491	401 012 5708	CARBON 1K JA 1/4W
R492	401 156 8504	MT-FILM 33K FA 1/6W
R493	401 019 4001	CARBON 390K JA 1/4W
R494	401 017 3808	CARBON 270K JA 1/4W
R496	401 024 7707	CARBON 100K JA 1/6W
★R497	401 059 9608	OXIDE-MT 2.2 JA 1W
R501	401 026 3707	CARBON 33 JA 1/6W
R502	401 027 3003	CARBON 56K JA 1/6W
R503	401 026 1307	CARBON 27K JA 1/6W
R504	401 026 9907	CARBON 4.7K JA 1/6W
R505	401 006 8401	CARBON 1.5 JA 1/2W
R506	401 026 0607	CARBON 270 JA 1/6W
R507	401 006 8104	CARBON 1.2 JA 1/2W
R508	401 022 3107	CARBON 6.8K JA 1/4W
R509	401 026 4308	CARBON 3.3K JA 1/6W
★R511	401 059 6706	OXIDE-MT 180 JA 1W
★R601	402 057 5104	WIRE WOUND 1 KA 8W
	402 076 6908	WIRE WOUND 1 KA 7W
★R602	402 000 0705	SOLID 3.3M KA 1/2W
R603	401 007 5805	CARBON 120K JA 1/2W
★R604	401 068 6209	OXIDE-MT 5.6 JA 2W
★R613	401 068 6902	OXIDE-MT 56 JA 2W
R614	401 011 1107	CARBON 68 JA 1/2W
R615	401 014 5201	CARBON 15K JA 1/4W
R616	401 026 4209	CARBON 3.3K GA 1/6W
R617	401 024 6908	CARBON 1K GA 1/6W
★R618	401 068 6902	OXIDE-MT 56 JA 2W
R619	401 025 8208	CARBON 22K JA 1/6W
R620	401 027 2600	CARBON 5.6K JA 1/6W
R622	401 026 5701	CARBON 3.6K GA 1/6W
★R623	401 067 4206	OXIDE-MT 33 JA 2W
R624	401 025 1605	CARBON 1.5K JA 1/6W
R625	401 008 0908	CARBON 180 JA 1/2W
★R626	401 066 9103	OXIDE-MT 27 JA 2W
R630	401 010 4307	CARBON 47K JA 1/2W
R641	401 027 3003	CARBON 56K JA 1/6W
R642	401 024 7400	CARBON 10K JA 1/6W
R643	401 026 4605	CARBON 33K JA 1/6W
R681	401 012 4503	CARBON 100 JA 1/4W
R682	401 026 4308	CARBON 3.3K JA 1/6W
R683	401 026 4308	CARBON 3.3K JA 1/6W
R684	401 026 1000	CARBON 2.7K JA 1/6W
R703	401 024 6700	CARBON 100 JA 1/6W
R706	401 024 6700	CARBON 100 JA 1/6W
R707	401 027 8107	CARBON 82 JA 1/6W
R710	401 024 6700	CARBON 100 JA 1/6W
★R711	401 065 4604	OXIDE-MT 12K JA 2W
★R712	401 065 4604	OXIDE-MT 12K JA 2W
★R713	401 065 4604	OXIDE-MT 12K JA 2W
R715	401 009 1508	CARBON 2.7K JA 1/2W
R716	401 009 1508	CARBON 2.7K JA 1/2W
R717	401 009 1508	CARBON 2.7K JA 1/2W
R803	401 025 8208	CARBON 22K JA 1/6W
R804	401 024 7400	CARBON 10K JA 1/6W
R807	401 024 7400	CARBON 10K JA 1/6W
R808	401 024 7400	CARBON 10K JA 1/6W
R811	401 027 2600	CARBON 5.6K JA 1/6W

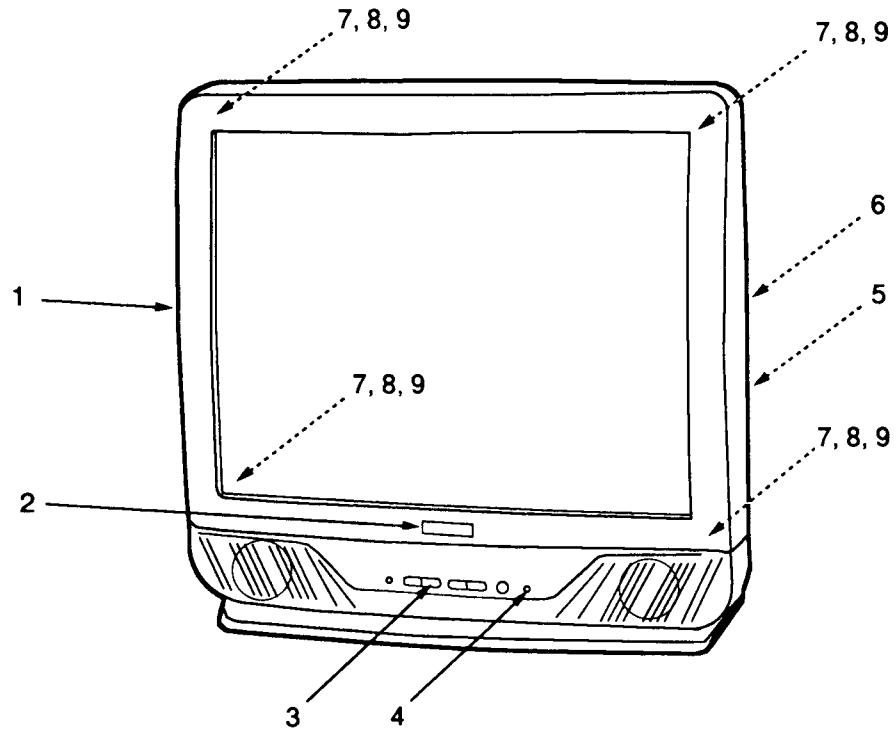
Schematic Location	Part No.	Description
R812	401 026 7002	CARBON 3.9K JA 1/6W
R813	401 024 7400	CARBON 10K JA 1/6W
R814	401 024 7400	CARBON 10K JA 1/6W
R816	401 026 3905	CARBON 330 JA 1/6W
R818	401 025 8208	CARBON 22K JA 1/6W
R822	401 025 3807	CARBON 180 JA 1/6W
R823	401 024 9701	CARBON 12K JA 1/6W
R827	401 027 2600	CARBON 5.6K JA 1/6W
R828	401 026 4605	CARBON 33K JA 1/6W
R831	401 024 7707	CARBON 100K JA 1/6W
R833	401 024 7400	CARBON 10K JA 1/6W
R834	401 024 6700	CARBON 100 JA 1/6W
R836	401 027 5205	CARBON 680 JA 1/6W
R837	401 026 7002	CARBON 3.9K JA 1/6W
R838	401 027 5205	CARBON 680 JA 1/6W
R839	401 026 7002	CARBON 3.9K JA 1/6W
R841	401 024 7004	CARBON 1K JA 1/6W
R842	401 026 7002	CARBON 3.9K JA 1/6W
R843	401 025 7805	CARBON 2.2K JA 1/6W
R846	401 027 8305	CARBON 820 JA 1/6W
R847	401 026 9907	CARBON 4.7K JA 1/6W
R848	401 026 1307	CARBON 27K JA 1/6W
R850	401 024 7400	CARBON 10K JA 1/6W
R851	401 024 7400	CARBON 10K JA 1/6W
R853	401 024 7004	CARBON 1K JA 1/6W
R856	401 024 7004	CARBON 1K JA 1/6W
R858	401 052 9308	MT-FILM 15K FA 1/6W
R860	401 053 4708	MT-FILM 6.8K FA 1/6W
R861	401 027 2600	CARBON 5.6K JA 1/6W
R862	401 026 4308	CARBON 3.3K JA 1/6W
R864	401 026 1000	CARBON 2.7K JA 1/6W
R866	401 026 9907	CARBON 4.7K JA 1/6W
R867	401 027 5205	CARBON 680 JA 1/6W
R868	401 024 7400	CARBON 10K JA 1/6W
R869	401 024 7400	CARBON 10K JA 1/6W
R871	401 027 2600	CARBON 5.6K JA 1/6W
R872	401 027 3003	CARBON 56K JA 1/6W
R873	401 026 7002	CARBON 3.9K JA 1/6W
R874	401 026 9907	CARBON 4.7K JA 1/6W
R876	401 025 7805	CARBON 2.2K JA 1/6W
R877	401 025 7805	CARBON 2.2K JA 1/6W
R879	401 024 6700	CARBON 100 JA 1/6W
R880	401 026 7408	CARBON 39K JA 1/6W
R881	401 026 9600	CARBON 470 JA 1/6W
R882	401 026 1307	CARBON 27K JA 1/6W
R884	401 025 4606	CARBON 18K JA 1/6W
R886	401 025 1902	CARBON 15K JA 1/6W
R892	401 027 5908	CARBON 68K JA 1/6W
R893	401 026 7408	CARBON 39K JA 1/6W
R899	401 026 9907	CARBON 4.7K JA 1/6W
R1001	401 027 6608	CARBON 75 JA 1/6W
R1002	401 026 4902	CARBON 330K JA 1/6W
R1003	401 026 4902	CARBON 330K JA 1/6W
R1006	401 024 6700	CARBON 100 JA 1/6W
R1007	401 024 6700	CARBON 100 JA 1/6W
R1013	401 026 9600	CARBON 470 JA 1/6W
R1014	401 025 7805	CARBON 2.2K JA 1/6W
R1016	401 025 1902	CARBON 15K JA 1/6W
R1017	401 027 9005	CARBON 82K JA 1/6W
R1023	401 026 9600	CARBON 470 JA 1/6W
R1024	401 025 7805	CARBON 2.2K JA 1/6W
R1026	401 025 1902	CARBON 15K JA 1/6W
R1027	401 027 9005	CARBON 82K JA 1/6W
R1051	401 027 6608	CARBON 75 JA 1/6W
R1052	401 027 6608	CARBON 75 JA 1/6W
R1053	401 024 7400	CARBON 10K JA 1/6W
R1054	401 025 8208	CARBON 22K JA 1/6W
R1062	401 024 7400	CARBON 10K JA 1/6W

Schematic Location	Part No.	Description
R1064	401 024 7400	CARBON 10K JA 1/6W
R1066	401 025 8208	CARBON 22K JA 1/6W
R1071	401 026 6609	CARBON 390 JA 1/6W
R1081	401 026 1307	CARBON 27K JA 1/6W
R1082	401 027 5502	CARBON 6.8K JA 1/6W
R1901	401 024 7400	CARBON 10K JA 1/6W
R1902	401 024 7004	CARBON 1K JA 1/6W
R1903	401 025 4200	CARBON 1.8K JA 1/6W
R1904	401 025 7805	CARBON 2.2K JA 1/6W
R1905	401 026 7002	CARBON 3.9K JA 1/6W
R1906	401 027 2600	CARBON 5.6K JA 1/6W
R1907	401 024 9701	CARBON 12K JA 1/6W
R1953	401 024 7400	CARBON 10K JA 1/6W
R3401	401 024 7400	CARBON 10K JA 1/6W
R3402	401 026 7002	CARBON 3.9K JA 1/6W
R3403	401 103 1503	MT-FILM 45.3K FD 1/6W
R3404	401 095 0409	MT-FILM 47K FA 1/6W
R3406	401 027 3003	CARBON 56K JA 1/6W
R3407	401 024 9701	CARBON 12K JA 1/6W
R3414	401 026 7002	CARBON 3.9K JA 1/6W
R3418	401 026 4308	CARBON 3.3K JA 1/6W
R3421	401 180 8006	MT-FILM 43K FA 1/6W
R3424	401 024 8001	CARBON 1M JA 1/6W
R3426	401 024 7707	CARBON 100K JA 1/6W
R3431	401 026 4308	CARBON 3.3K JA 1/6W
R3432	401 027 5205	CARBON 680 JA 1/6W
R3501	401 027 5908	CARBON 68K JA 1/6W
R3502	401 027 3003	CARBON 56K JA 1/6W
R3503	401 024 7004	CARBON 1K JA 1/6W
R3504	401 024 7004	CARBON 1K JA 1/6W
R3506	401 024 7004	CARBON 1K JA 1/6W
R3521	401 027 5908	CARBON 68K JA 1/6W
R3522	401 027 3003	CARBON 56K JA 1/6W
R3523	401 024 7004	CARBON 1K JA 1/6W
R3524	401 024 7004	CARBON 1K JA 1/6W
R3526	401 024 7004	CARBON 1K JA 1/6W
R3531	401 024 7400	CARBON 10K JA 1/6W
R3532	401 024 7004	CARBON 1K JA 1/6W
R3533	401 024 7400	CARBON 10K JA 1/6W
R3534	401 025 4200	CARBON 1.8K JA 1/6W
R7932	401 027 5502	CARBON 6.8K JA 1/6W
R8001	401 024 6700	CARBON 100 JA 1/6W
R8002	401 024 6700	CARBON 100 JA 1/6W
R8003	401 037 5202	MT-GLAZE 100 JA 1/10W
R8004	401 037 5202	MT-GLAZE 100 JA 1/10W
R8007	401 038 6505	MT-GLAZE 47K JA 1/10W
R8009	401 038 6604	MT-GLAZE 470K JA 1/10W
R8011	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R8013	401 037 6803	MT-GLAZE 12K JA 1/10W
R8016	401 037 5202	MT-GLAZE 100 JA 1/10W
R8017	401 037 5202	MT-GLAZE 100 JA 1/10W
R8018	401 038 9308	MT-GLAZE 68K JA 1/10W
R8021	401 037 5707	MT-GLAZE 100K JA 1/10W
R8023	401 038 6307	MT-GLAZE 470 JA 1/10W
R8024	401 038 3504	MT-GLAZE 330 JA 1/10W
R8026	401 037 9200	MT-GLAZE 1.8K JA 1/10W
R8027	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R8028	401 020 0801	CARBON 470 JA 1/4W
R8030	401 037 5202	MT-GLAZE 100 JA 1/10W
R8031	401 010 7001	CARBON 56 JA 1/2W
R8032	401 010 7001	CARBON 56 JA 1/2W
R8035	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R8036	401 037 7909	MT-GLAZE 1.5K JA 1/10W

Schematic Location	Part No.	Description
	SWITCHES	
SW701	610 011 4227	SWITCH, LEVER(SERVICE/NORMAL)
SW1901	645 004 3062	SWITCH, PUSH(POWER)
SW1902	645 004 3062	SWITCH, PUSH(VOL +)
SW1903	645 004 3062	SWITCH, PUSH(VOL -)
SW1904	645 004 3062	SWITCH, PUSH(CH △)
SW1905	645 004 3062	SWITCH, PUSH(CH ▽)
SW1906	645 004 3062	SWITCH, PUSH(MENU)
	TRANSFORMERS	
T131	610 037 7615	S TRANS
T151	645 000 5206	TRANS, OSC, 45.75MHZ
T161	610 037 6564	S TRANS
T401	610 000 1138	DRIVE TRANS
	610 223 1663	DRIVE TRANS
★T402	645 018 9579	TRANS, FLYBACK
★T601	645 021 6572	TRANS, POWER, PULSE
★T681	610 033 3925	POWER TRANS
	VARIABLE RESISTORS	
VR141	645 001 9319	VR B-10K(RF-AGC)
	645 006 5095	VR B-10K
	645 023 5153	VR B-10K
VR300	645 017 4711	VR B-470(Y/C SEP.)
VR501	645 001 9364	VR B-50K(V-SIZE)
	645 006 5217	VR B-50K
	645 023 5207	VR B-50K
VR701	645 020 2629	VR B-5K(R-BIAS)
VR702	645 020 2629	VR B-5K(G-BIAS)
VR703	645 020 2629	VR B-5K(B-BIAS)
VR704	645 020 2612	VR B-200(R-DRIVE)
VR705	645 020 2612	VR B-200(B-DRIVE)
VR3403	645 006 2421	VR B-20K(1.5fH)
	645 006 5132	VR B-20K
	645 023 5177	VR B-20K
VR3406	645 006 2421	VR B-20K(VCO)
	645 006 5132	VR B-20K
	645 023 5177	VR B-20K
VR3411	645 006 2476	VR B-5K(HI-SEP.)
	645 006 5200	VR B-5K
	645 023 5191	VR B-5K
VR3421	645 001 9319	VR B-10K(LO-SEP.)
	645 006 5095	VR B-10K
	645 023 5153	VR B-10K
	FILTERS/CRYSTALS	
X141	421 006 3206	SAW F TSF5221P
X153	610 015 2946	CERAMIC FILTER 4.5MHZ
X161	610 015 3059	TRAP, CERAMIC 4.5MHZ
X251	610 012 0655	CRYSTAL OSCILLATOR
	610 204 4195	CRYSTAL OSCILLATOR
	610 245 9746	CRYSTAL OSCILLATOR
X401	610 012 2970	OSC, CERAMIC 503.5KHZ
	645 003 4107	OSC, CERAMIC 503KHZ
X801	645 000 5299	OSC, CERAMIC 12.0MHZ
X8002	610 234 9085	CRYSTAL OSCILLATOR
X8003	610 234 9085	CRYSTAL OSCILLATOR

Schematic Location	Part No.	Description
	MISCELLANEOUS	
A100	610 266 6205	ASSY, PWB, MAIN
★A101	645 020 9208	TUNER, U/V
A102	610 246 9660	HOLDER ANT A-VC
A102B	610 011 8492	CABLE
	610 245 2716	CABLE
A700	610 266 1644	ASSY, PWB SOCKET
A1000	610 266 6212	ASSY, PWB, A/V
A1901	645 021 1041	UNIT, RC RECEIVER
A8000	610 265 0440	ASSY, PWB, PIP
A9901	610 259 4423	ASSY, PWB, RC
★F601	423 007 1601	FUSE 125V 4A
	423 007 1809	FUSE 125V 4A
	423 018 8101	FUSE 125V 4A
F601A	645 000 5077	HOLDER, FUSE
	645 016 0479	HOLDER, FUSE
F601B	645 000 5077	HOLDER, FUSE
	645 016 0479	HOLDER, FUSE
★K701	610 010 4181	CRT SOCKET
	645 017 2588	SOCKET, CRT 8P
K1001	610 010 3689	JACK, RCA
K1002	610 010 3665	JACK, RCA
K1003	610 010 3672	JACK, RCA
K1011	610 010 3665	JACK, RCA
K1021	610 010 3672	JACK, RCA
K1051	610 010 8295	SOCKET, DIN 4P
★PS601	408 000 3203	TH PTH631D01BF7ROM140
★Q900	414 009 3106	CRT A68AHD32X04
★RL601	645 000 4155	RELAY(POWER ON/OFF)
	645 011 2713	RELAY
	645 015 8629	RELAY
	645 024 7828	RELAY
SP901	610 055 6614	SPEAKER
SP902	610 055 6614	SPEAKER
VC801	610 003 0381	TRIMMER, 40PF(DISPLAY PLL)
★W601	645 014 2444	CORD, POWER
	645 023 1698	CORD, POWER
★W900	610 245 9562	(USA)GND CONNECTOR

CABINET PARTS LIST



CABINET PARTS LIST

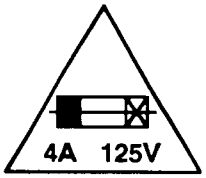
KEY NO.	PARTS NO.	DESCRIPTION
1.	610 266 0524	CABINET FRONT
2.	610 236 9274	SANYO BADGE
3.	610 257 8614	BUTTON UNITED
	411 078 1101	SCREW 4X14
OR	412 036 1805	SCREW 4X14
4.	610 265 3786	CAP RC
5.	610 268 4049	DEC REAR SHEET
6.	610 266 9244	CABINET BACK
	411 078 1101	SCREW 4X14(8 USED)
OR	412 036 1805	SCREW 4X14
	412 018 8402	SCREW 3X10
		(2 USED FOR MTG AV JACK)
7.	412 046 8405	SPACER WASHER(4 USED)
8.	412 053 3905	CRT MTG SCREW 6X30(4 USED)
OR	412 054 0002	CRT MTG SCREW 6X30
9.	610 102 7151	DC HOLDER(4 USED)
	411 078 1101	SCREW 4X14(4 USED FOR MTG SP)
OR	412 036 1805	SCREW 4X14

ACCESSORY PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
	645 023 5757	ASSY, RC TRANSMITTER
	610 259 4522	RC-BATTERY COVER
	610 266 7592	OWNER'S MANUAL

COMPONENT AND TESTPOINT LOCATIONS

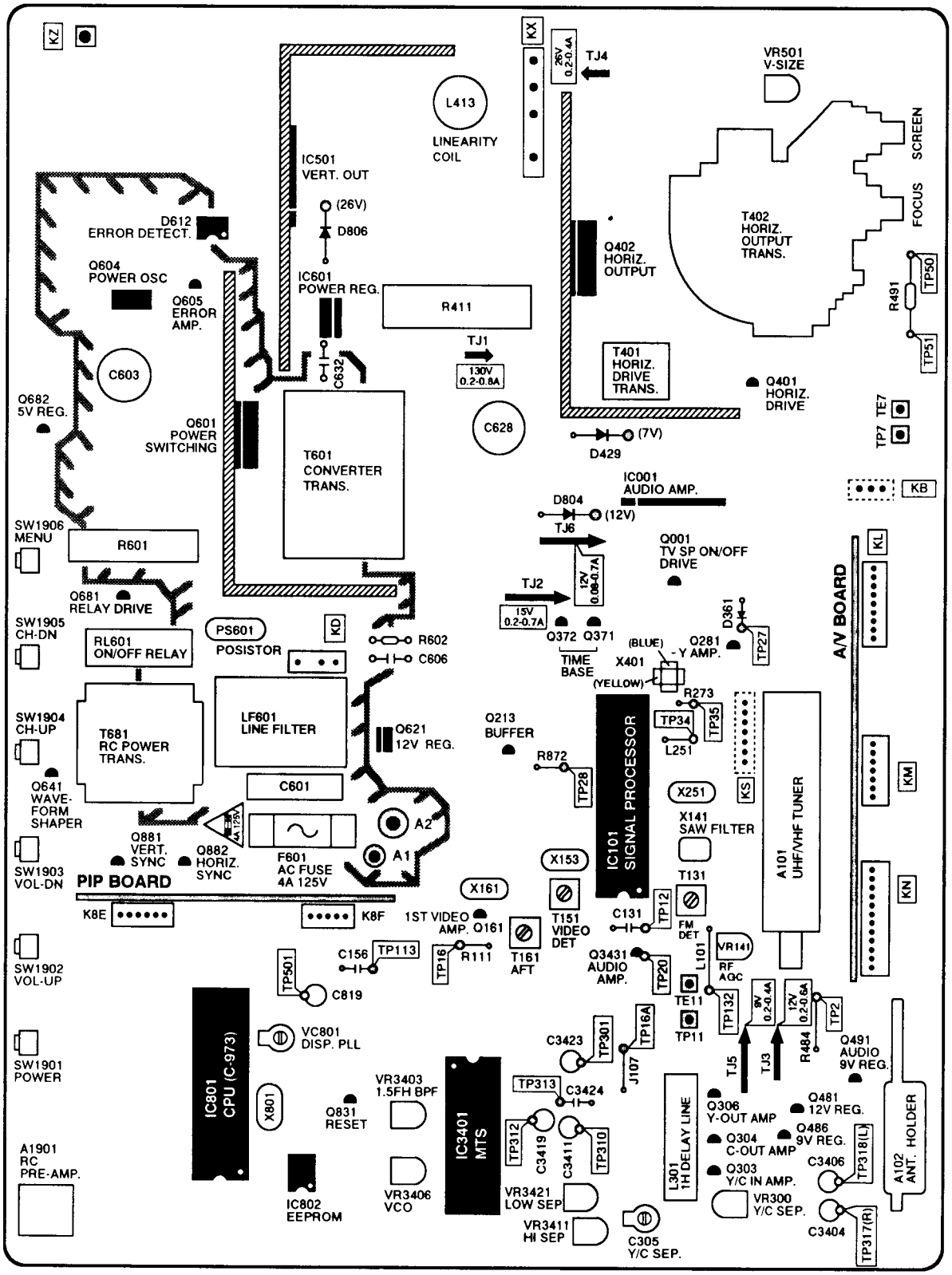
CAUTION



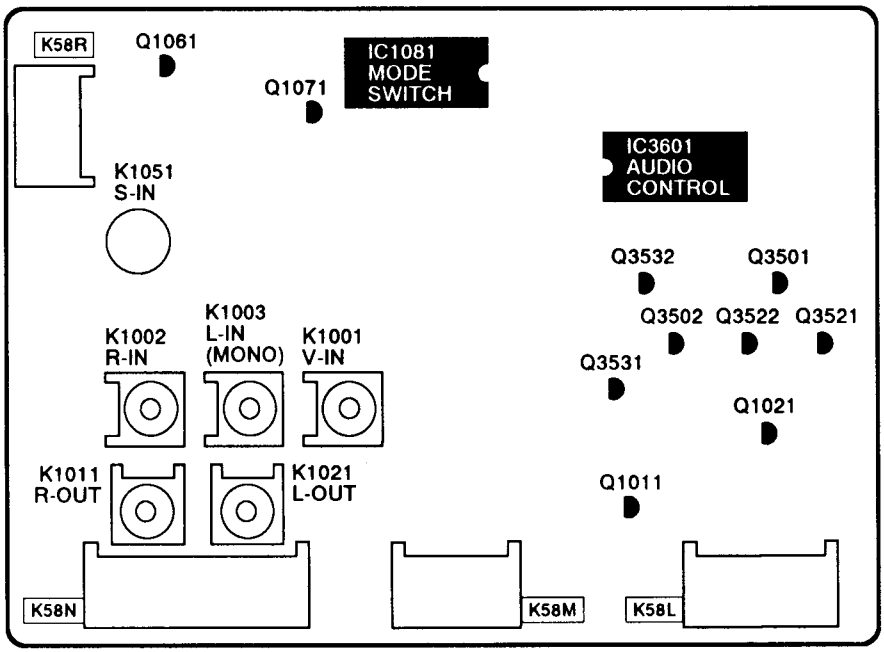
FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE 4A, 125V FUSE.

ATTENTION : POUR MAINTENIR LA PROTECTION CONTRE LES RISQUES D'INCENDIE UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE 4A, 125V.

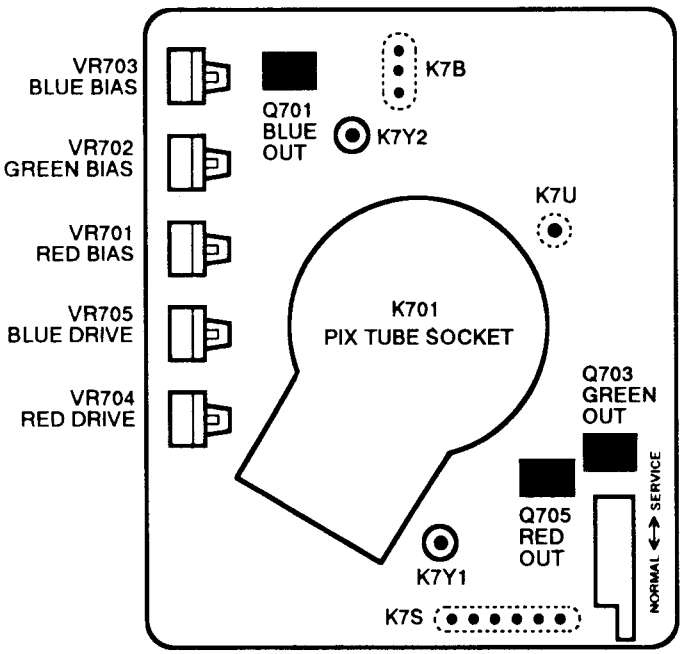
MAIN BOARD



A/V BOARD

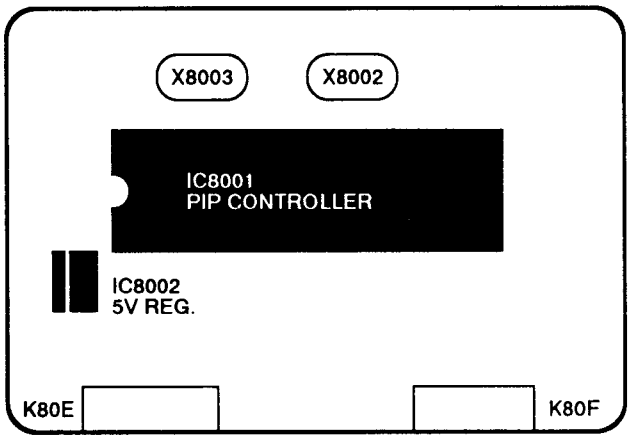


PIX TUBE SOCKET BOARD



SW701
SERVICE/NORMAL
SWITCH

PIP BOARD



SCHEMATIC DIAGRAM

NOTES ON SCHEMATIC DIAGRAM

1. All resistance values in ohms K=1,000 M=1,000,000.
2. Unless otherwise noted on schematic, all capacitor values less than 1 are expressed in μ F (Micro Farad) and the values more than 1 are in pF.
3. Unless otherwise noted on schematic, voltage reading taken with "VTVM" from point indicated to chassis ground. Voltage reading taken using a color bar signal on VHF channel 5, all controls at normal. Line voltage at 120 volts. Some voltages may vary with signal strength.
4. Waveforms were taken with color bar signal and controls adjusted for normal picture. Waveforms marked with an * may vary with signal strength.
5. The Symbol (⚠) indicates fusible resistor, which protects the circuit from possible short circuits.

SERVICE NOTES:

1. When replacing parts on circuit boards, clamp the lead wires to terminals before soldering.
2. When replacing high wattage resistors on circuit board, keep the resistor body 10 mm (3/8") from circuit board.
3. Keep wires away from high voltage and high temperature components.

PRODUCT SAFETY NOTICE

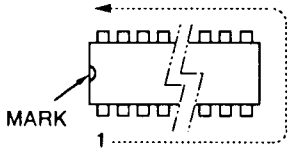
THE COMPONENTS DESIGNATED BY A STAR(★) ON THIS SCHEMATIC DIAGRAM DESIGNATE COMPONENT WHOSE VALUES ARE OF SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. SHOULD ANY COMPONENT DESIGNATED BY A STAR NEED TO BE REPLACED, USE ONLY THE PART DESIGNATED IN THE PARTS LIST. DO NOT DEVIATE FROM THE RESISTANCE, WATTAGE AND VOLTAGE RATINGS SHOWN.

X-RADIATION WARNING NOTE

THIS TV CONTAINS CRITICAL PARTS TO PROTECT AGAINST X-RADIATION. NOMINAL 2ND ANODE VOLTAGE IS 29.0KV AT ZERO BEAM CURRENT AT 120VOLTS AC LINE, AND MUST NOT EXCEED 30.0KV UNDER ANY OPERATING CONDITION. SEE HIGH VOLTAGE CHECK ON PAGE 3.

INTEGRATED CIRCUITS

TOP VIEW



COUNT TERMINALS IN ARROW DIRECTION

SIDE VIEW

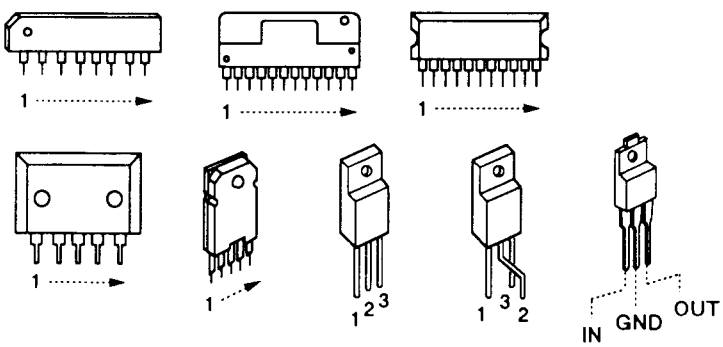
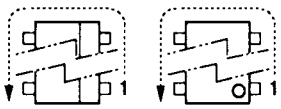
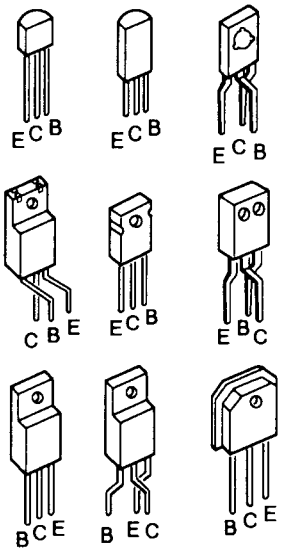


PHOTO COUPLERS

TOP VIEW

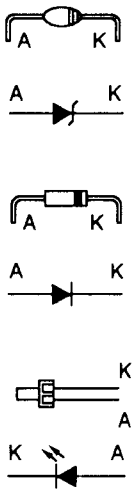


TRANSISTORS



B ... BASE
C ... COLLECTOR
E ... EMITTER

DIODES

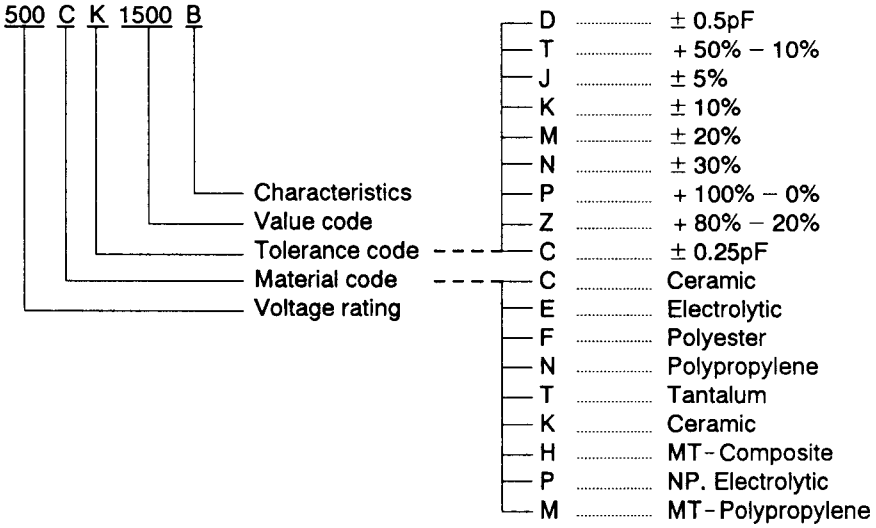


INFRARED EMITTING DIODE

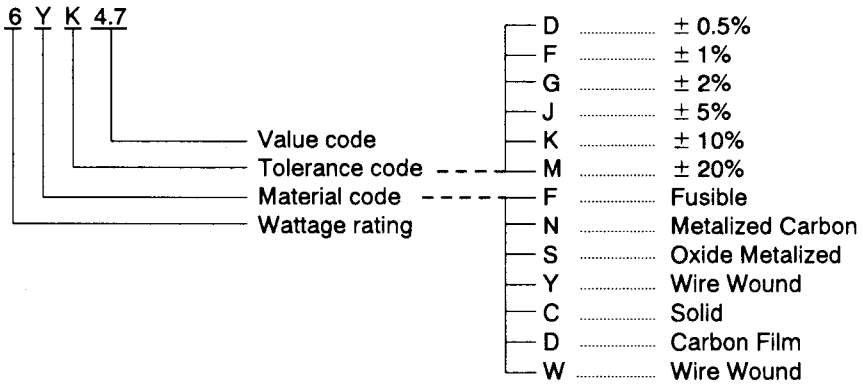
A ... ANODE
K ... CATHODE

CAPACITOR AND RESISTOR CODE CHART

CAPACITOR (Example)



RESISTOR (Example)



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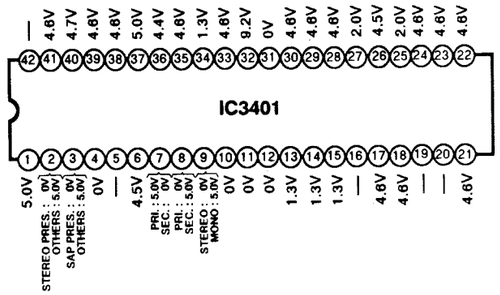
For Parts or Service Contact
SANYO FISHER SERVICE
1411 West 190th Street, Suite 700,
South Bay Corporate Center, Gardena, CA 90248

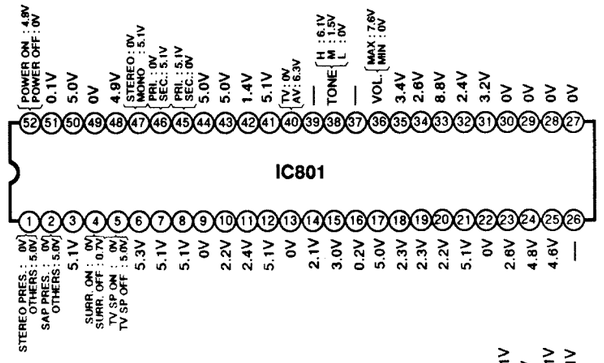
MODEL DS27780
Chassis No. 27780-00

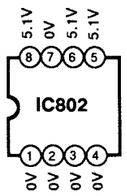
CAUTION **FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE 4A, 125V FUSE.**

4A 125V

ATTENTION : POUR MAINTENIR LA PROTECTION CONTRE LES RISQUES D'INCENDIE UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE 4A, 125V.







Q831	
	VOLT.
B	4.4 V
C	9.2 V
E	3.2 V

Q3431	
	VOLT.
B	3.8 V
C	9.2 V
E	3.2 V

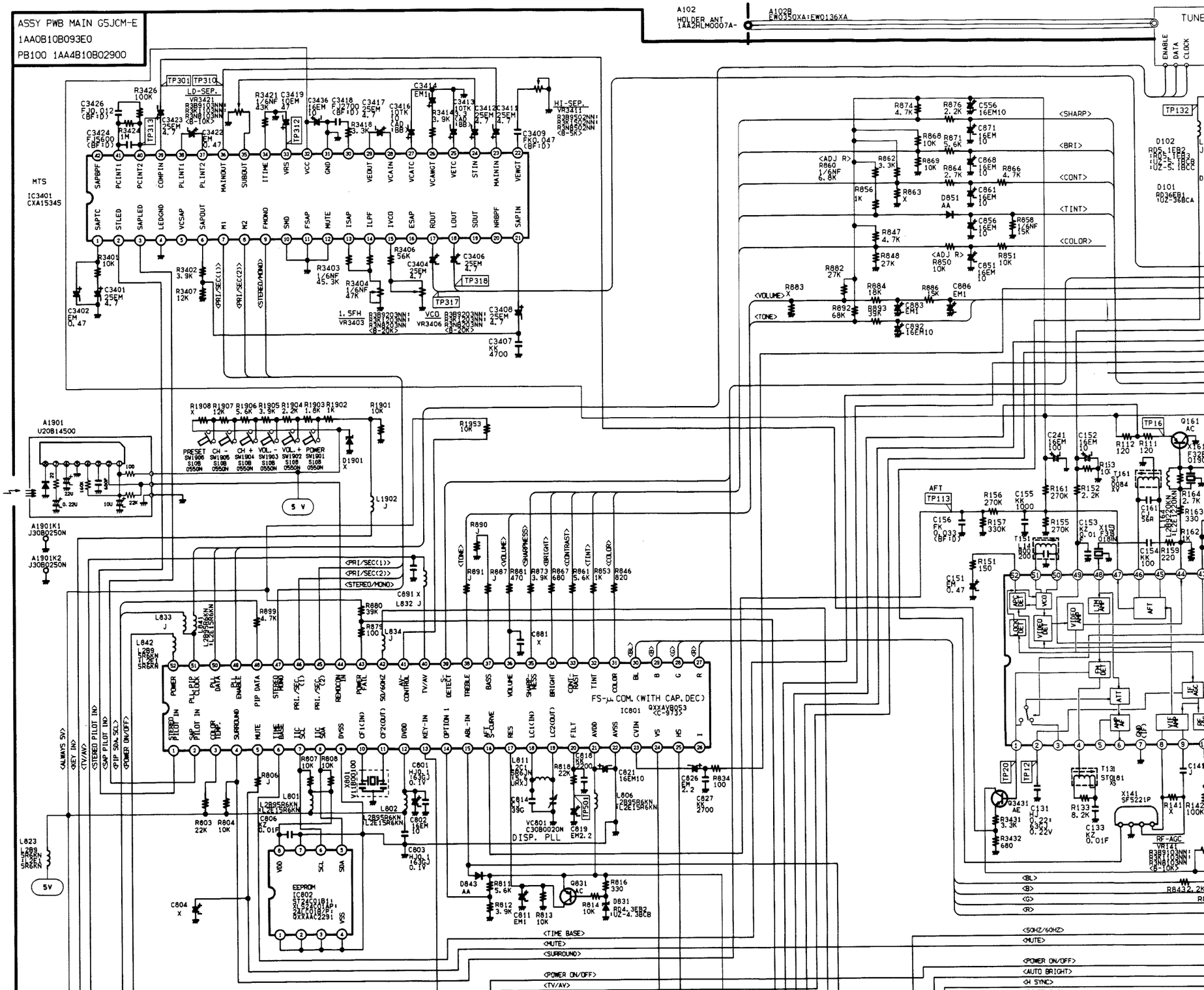
Q161	
	VOLT.
B	3.0 V
C	0 V
E	3.7 V

Q213	
	VOLT.
B	4.1 V
C	0 V
E	4.7 V

Q371	
	VOLT.
B	6.4 V
C	0 V
E	5.3 V

Q372	
	VOLT
B	4.7 V
C	5.3 V
E	5.3 V

Q481	
	VOLT.
B	12.7 V
C	12.5 V
E	12.0 V

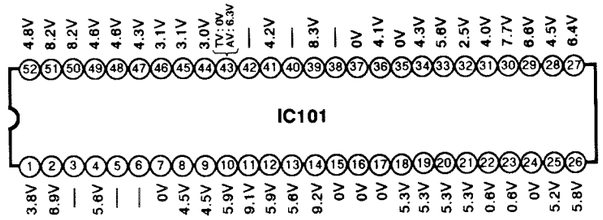


Q372	
	VOLT.
B	4.7 V
C	5.3 V
E	5.3 V

Q481	
	VOLT.
B	12.7 V
C	12.5 V
E	12.0 V

Q486	
	VOLT.
B	9.9 V
C	10.4 V
E	9.2 V

Q491	
	VOLT.
B	10.9 V
C	11.1 V
E	10.2 V



Q161 Emitter (TP16)

1.2V HORIZ.

IC101 ⑱ pin (R-Y)

1.4V HORIZ.

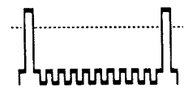
IC101 ⑲ pin (G-Y)

0.5V HORIZ.

IC101 ⑳ pin (B-Y)

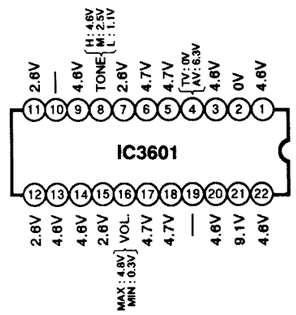
1.6V HORIZ.

IC101 ㉑ pin (-Y)



6V HORIZ.

ASSY PWB AV G5JCM-G
1AA0B10B095G0
PB1001 B10B0230A



Q3502		
	SURROUND ON	SURROUND OFF
B	6.3 V	6.1 V
C	9.1 V	9.1 V
E	5.7 V	5.4 V

Q3501		
	SURROUND ON	SURROUND OFF
B	3.7 V	3.6 V
C	6.3 V	6.1 V
E	3.0 V	3.0 V

Q3532		
	SURROUND ON	SURROUND OFF
B	3.7 V	0 V
C	3.0 V	3.0 V
E	3.0 V	—

Q3531		
	SURROUND ON	SURROUND OFF
B	0 V	0.7 V
C	6.5 V	0 V
E	0 V	0 V

Q3522	
	VOLT.
B	6.1 V
C	9.1 V
E	5.4 V

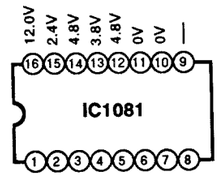
Q3521	
	VOLT.
B	3.7 V
C	6.1 V
E	3.0 V

Q1011	
	VOLT.
B	1.4 V
C	5.5 V
E	0.8 V

Q1021	
	VOLT.
B	1.4 V
C	5.5 V
E	0.8 V

Q1061	
	VOLT.
B	4.8 V
C	12.0 V
E	12.0 V

Q1071	
	VOLT.
B	0.7 V
C	0 V
E	0 V



Q831	
	VOLT.
B	4.4 V
C	5.0 V
E	5.1 V

Q881	
	VOLT.
B	0 V
C	4.8 V
E	0 V

Q882	
	VOLT.
B	0 V
C	4.6 V
E	0 V

IC802

5.0V 0V 9.2V

0V

1.1V 0V 5.0V 2.2V 2.3V 4.8V 4.9V 1.3V 4.9V 4.6V

28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

IC8001

29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56

2.4V 2.3V 1.1V 0V 1.4V 4.7V 1.3V 2.6V 0.2V 3.7V 3.5V 5.0V 1.8V 1.0V 2.4V 1.3V 0V 1.7V 5.0V 2.5V 2.0V 1.9V

Q8051	
	VOLT.
B	4.7 V
C	0 V
E	5.4 V

ASSY, PWB, PIP G5JBM
1AA0B10B09200
PB8001 1AA4B10B0320A

IC8001
QMC44461B

SMCONT TEST12 TEST11 TEST10 TEST9 TEST8 TEST7 TEST6 TEST5 TEST4 TEST3 TEST2 TEST1 MONO MVDD TEST0 TSM1 TSM0 MIL_SEL DGND DVDD PLF1L BIAS MRESET SDA SCL VIN HIN

N.C. MULTST HPLL SOSRES HDRPLL VINEXT AGNDNR VININT DEVCC DEVCXL DECPLL DECVCP DECLCP DECVCP DECVCP AVCC CMPHAS ENCACC ENCPLL ENCXTL ENCXTL AGNDRO VIDOUT VDVCC N.C. ENVCAP ENVCAP ENVCAP UDVTST VDVTST

IC8002
BA178M05T MC78M05CT
BPC78M05AHP

K8E EZ0118A
K8OF EZ0160A
K8F

ASSY, PWB, SOCKET G3THM(1AA0B10B051D0)
PB8701 4AA4B10577A--

R-OUT Q705
G-OUT Q703
B-OUT Q701
R-BIAS VR701 R3NA502NJ <B-5K>
G-BIAS VR702 R3NA502NJ <B-5K>
B-BIAS VR703 R3NA502NJ <B-5K>
R-DRIVE VR704 R3NA201NJ <B-200>
G-DRIVE VR705 R3NA201NJ <B-200>
B-DRIVE VR706 R3NA201NJ <B-200>
SERVICE SW SW701 S10B1380N
Q701, Q703, Q705 2SC2621(CRA) 2SC2621(DRA) 2SC2621(ERA) DTD222J 2SC2688 1'(K+L+M)

K7B K7S K7U K7Y1 K7Y2 K701 E50634 J11B1770N

Q900 CRT A68AHD32X04 27V NAP

W900 4AA0JG0269---

DEFLECTION-YOKE
CRT COMPONENT

KX KXSP KX4P KX3P KX1P J30B 0250N

KB J11NA030N

KZ J30B 0250N

IC501 LA7838 (IC501A 1AA2HAA0027--)

V_OUT PUMP UP VCC SIZE CONT

T402 L40A00711 F.B.T

HV FD SC V+B LOW +B AFC HEATER

D501 S5277B RD0445 RHPG06 ERA15-02

D806 S5277B RD0445 RHPG06 ERA15-02

D483 ESI RHPG06G ERA18-04

D503 UZ-36BCA RD36EB1

D481 ESI ERA18-04 RHPG06G

D482 TVR1G

D429 AA

D428 UZ-15BCA RD15EB1

Q701	
	VOLT.
B	5.3 V
C	195.1V
E	5.5 V

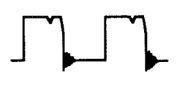
Q703	
	VOLT.
B	5.3 V
C	200.3V
E	5.5 V

Q705	
	VOLT.
B	5.3 V
C	195.8V
E	5.5 V

Q401	
	VOLT.
B	0.4 V
C	42.1 V
E	0 V

Q402	
	VOLT.
B	1.7 V
C	—
E	1.7 V

Q401 Base

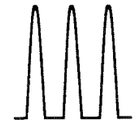


0.7V HORIZ.

Q402 Base

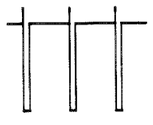
11V HORIZ.

T402 ⑨ pin



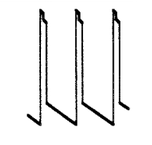
25V HORIZ.

IC501 ② pin

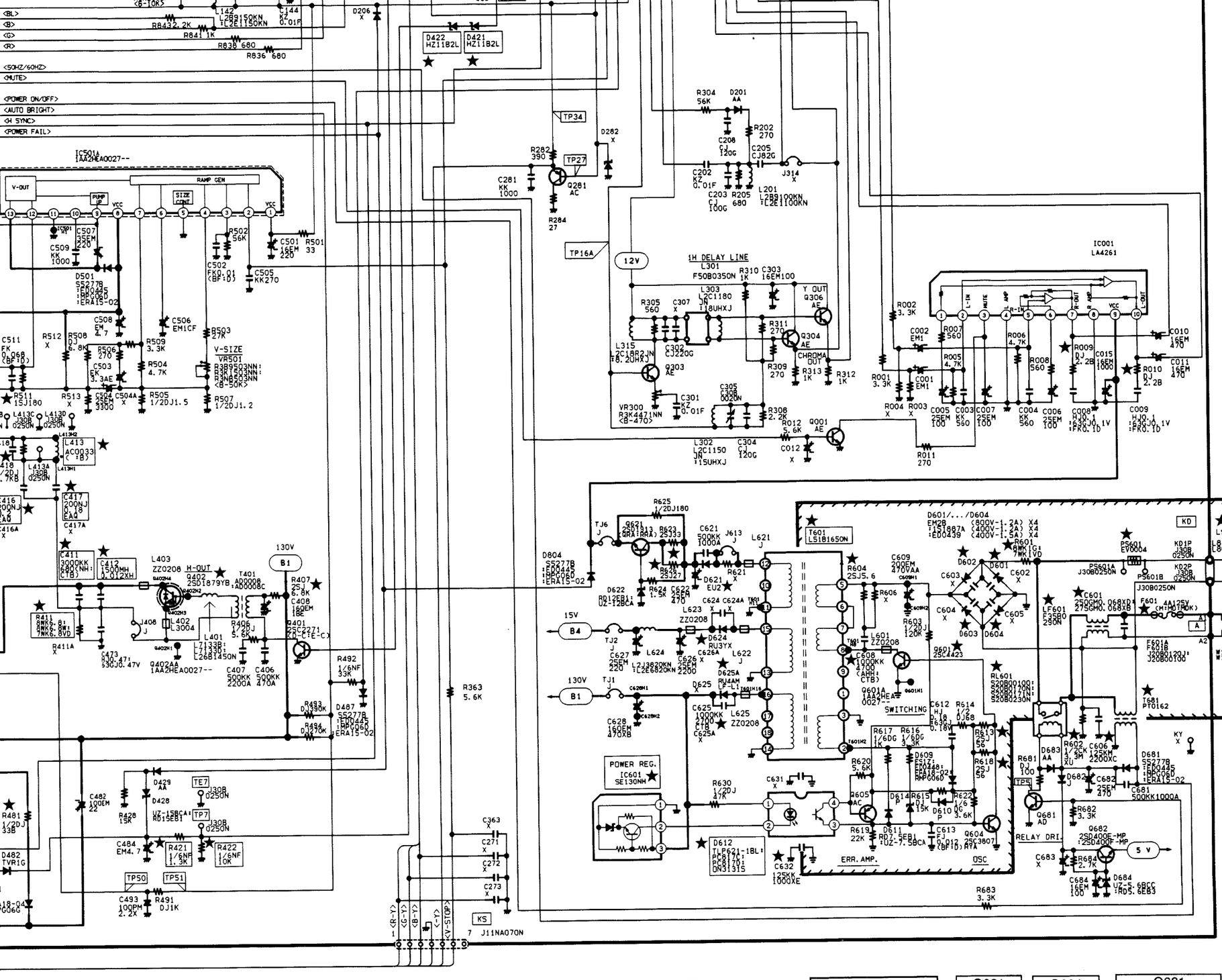


4.8V VERT.

IC501 ⑫ pin

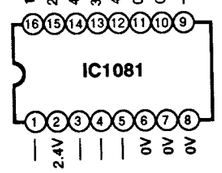


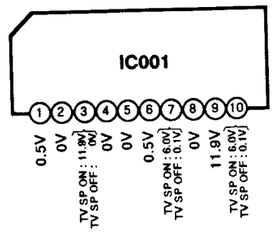
52V VERT.



Q1061	
	VOLT.
B	4.8 V
C	12.0 V
E	4.1 V

Q1071	
	VOLT.
B	0.7 V
C	0 V
E	0 V





Q001		
	TV SP ON	TV SP OFF
B	0 V	0.7 V
C	8.8 V	0 V
E	0 V	0 V

Q303	
	VOLT.
B	5.4 V
C	12.0 V
E	4.7 V

Q304	
	VOLT.
B	5.4 V
C	12.0 V
E	4.7 V

Q306	
	VOLT.
B	5.4 V
C	12.0 V
E	4.7 V

Q281	
	VOLT.
B	5.4 V
C	0 V
E	5.3 V

Q621	
	VOLT.
B	11.3 V
C	17.9 V
E	11.9 V

Q604	
	VOLT.
B	-1.5 V
C	-1.2 V
E	0 V

Q681		
	POWER ON	POWER OFF
B	0.7 V	0 V
C	0.1 V	18.3 V
E	0 V	0 V

Q601	
	VOLT.
B	-1.2 V
C	161 V
E	0 V

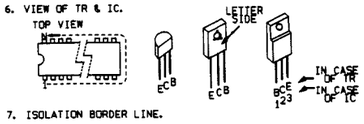
Q605	
	VOLT.
B	11.9 V
C	-1.5 V
E	12.4 V

Q682		
	POWER ON	POWER OFF
B	5.8 V	5.8 V
C	15.9 V	18.2 V
E	5.2 V	5.2 V

4A 125V

IMPORTANT:
SCHEMATIC PART LOCATION NUMBERS MAY NOT ALWAYS MATCH THE SCHEMATIC SYMBOLS.
THE SCHEMATIC SYMBOLS AND PART DESCRIPTIONS ARE CORRECT AND SHOULD BE USED.
THE PART DESCRIPTIONS WILL BE LISTED UNDER THE LOCATION NUMBER IN THE PARTS LIST.

NOTES:
1. RESISTORS SPECIFIED WITH RESISTANCE VALUE ARE "1/6DJ".
2. RESISTORS SPECIFIED WITH TYPE OF RESISTOR, TOLERANCE AND RESISTANCE VALUE ARE "1/4".
3. ALL CAPACITORS ARE 50WV RATING UNLESS OTHERWISE NOTED.
4. PARTS MARKED WITH ▭ ARE RELATED WITH X-RADIATION.
5. THICK LINES ARE 1SWATTS SUPPLY LINE.
6. VIEW OF TR & IC.



7. ISOLATION BORDER LINE.

COLD SIDE | HOT SIDE

8. LIST OF REPLACEABLE DIODES.

M (7ED00025)	1SS176, 1SS133, GMA01
R (7DD00019)	1S1555, 1S2076, 1S2473, DS442, 1N4148
AA (7DD00192)	1S1555, 1S2076, 1S2473, DS442, 1N4148, 1SS176, 1SS133, GMA01
P (7DD00021)	1S1553, 1S2076A, 1S2471, 1N4148

9. LIST OF REPLACEABLE TRANSISTORS.

	2SC536	2SC945A	2SC1815	2SC1740S
AD (7T200183)	F, G	Q, P	Y, GR	Q, R, S
AE (7QT00202)	E, F, G	R, Q, P	O, Y, GR	Q, R, S
	2SA608	2SA564A	2SA1015	2SA933S
AB (7T200181)	F	R	Y	Q, R
AC (7T200182)	E, F	Q, R	O, Y	R

10. "J" : JUMPER WIRE.
"X" : PART NOT USED.

Notice

SANYO

☐ CORRECTION ☐ SERVICE FLASH ☐ PRODUCTION CHANGE ☐ ADD INFORMATION

FILE NO. C-23027

REVISION 1

Please add this notice to the Service Manual listed below.

Category : **COLOR TELEVISION** Date : **July / 15 /1997**

Model : **DS27780** Effective from : Chassis No. **27780-01**

Destination : **U.S.A.** REF : No. **SM510171**

NOTE: Match the Chassis No. on the unit's back cover with the Chassis No. in the Service Manual. **If the Service Manual Chassis No. does not match the unit's,** additional Service Literature is required. This chassis is similar to Chassis No. 27780-00. Only the **Difference** Service Information is given in this manual. For detailed Service Information, refer to the **Original** Service Manual and **Notices** for Chassis No. 27780-00 used in Model DS27780 (SM510171).

1. IN THE CHASSIS ELECTRICAL PARTS LIST

The reason for change.

A : Misprint B : Quality Reliability C : Standardization D : Design
E : Add As a possible sub F : Schematic Location Change G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchange-ability	Reason
Page 10, Chassis Electrical Parts List	C013	Old		NOT USED			B
		New	403 069 8305	CERAMIC 0.01U Z 50V	1	NO	
Page 11, Chassis Electrical Parts List	★C608	Old	403 165 9404 403 232 0600	CERAMIC 4700P K 1K CERAMIC 4700P K 1K	1	YES	G
		New	403 232 0600 403 247 5508	CERAMIC 4700P K 1K CERAMIC 4700P K 1K	1	YES	
Page 11, Chassis Electrical Parts List	★C708	Old	403 077 2708 403 175 3409	CERAMIC 1000P P 2K CERAMIC 1000P P 2K	1	YES	G
		New	403 077 2807 403 175 3409	CERAMIC 1000P Z 2K CERAMIC 1000P P 2K	1	YES	
Page 14, Chassis Electrical Parts List	L401	Old	610 032 4381 610 032 4404 645 021 2727	FILTER COIL FILTER COIL INDUCTOR, 3.3U, FILTER	1	YES	G
		New	645 017 7675	INDUCTOR, 3.3U, FILTER	1	YES	
Page 14, Chassis Electrical Parts List	★L901	Old	610 229 3210 645 022 8674	DEGAUSSING COIL COIL, DEGAUSSING	1	NO	D
		New	645 026 3538	COIL, DEGAUSSING	1	NO	

Parts list continued on back.

1. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint B : Quality Reliability C : Standardization D : Design
E : Add As a possible sub F : Schematic Location Change G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchange-ability	Reason
Page 19, Chassis Electrical Parts List	A100	Old	610 266 6205	ASSY, PWB, MAIN	1	NO	D
		New	610 269 9326	ASSY, PWB, MAIN	1	NO	
Page 19, Chassis Electrical Parts List	★PS601	Old	408 000 3203	TH PTH631D01BF7R0M140	1	NO	D
		New	408 006 7304	TH PTH631D01BF5R0M125	1	NO	
Page 19, Chassis Electrical Parts List	★RL601	Old	645 000 4155 645 011 2713 645 015 8629 645 024 7828	RELAY (POWER ON/ OFF) RELAY RELAY RELAY	1	YES	G
		New	645 000 4155 645 011 2713 645 015 8629 645 024 7767 645 024 7828	RELAY (POWER ON/ OFF) RELAY RELAY RELAY RELAY	1	YES	

July / '97 / 2000 MA Printed in Japan

For parts or service contact
SANYO FISHER SERVICE COMPANY
1411 West 190th Street, Suite 800,
South Bay Corporate Center, Gardena, CA 90248

Notice

SANYO

☐ CORRECTION ☐ SERVICE FLASH ☐ PRODUCTION CHANGE ☐ ADD INFORMATION

FILE NO. C-23UC

REVISION 2

Please add this notice to the Service Manual listed below.

Category : **COLOR TELEVISION** Date : **Sep. / 26 /1997**

Model : **DS27780** Effective from : Chassis No. **27780-00**

Destination : **U.S.A.** REF : No. **SM510171**

1. IN THE CHASSIS ELECTRICAL PARTS LIST

The reason for change.

A : Misprint B : Quality Reliability C : Standardization D : Design
E : Add As a possible sub F : Schematic Location Change G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchange-ability	Reason
Page 13, Chassis Electrical Parts List	IC801	Old	410 273 2401	IC LC864128-5E21	1	NO	B
		New	410 300 1902	IC LC864128-5F80	1	YES	
Page 19, Chassis Electrical Parts List	X153	Old	610 015 2946	CERAMIC FILTER 4.5MHZ	1	YES	E
		New	610 015 2946 610 250 1759	CERAMIC FILTER 4.5MHZ CERAMIC FILTER 4.5MHZ	1	YES	

G5JPM, PRODUCT CODE 111328592

REFERENCE No. SM510171-02

For parts or service contact
SANYO FISHER Service Company
A Division of SANYO Logistics Corporation
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